Welcome!

14th Annual GNU Radio Conference

Josh Morman

President, member of the board

Long time user, contributor, developer, maintainer

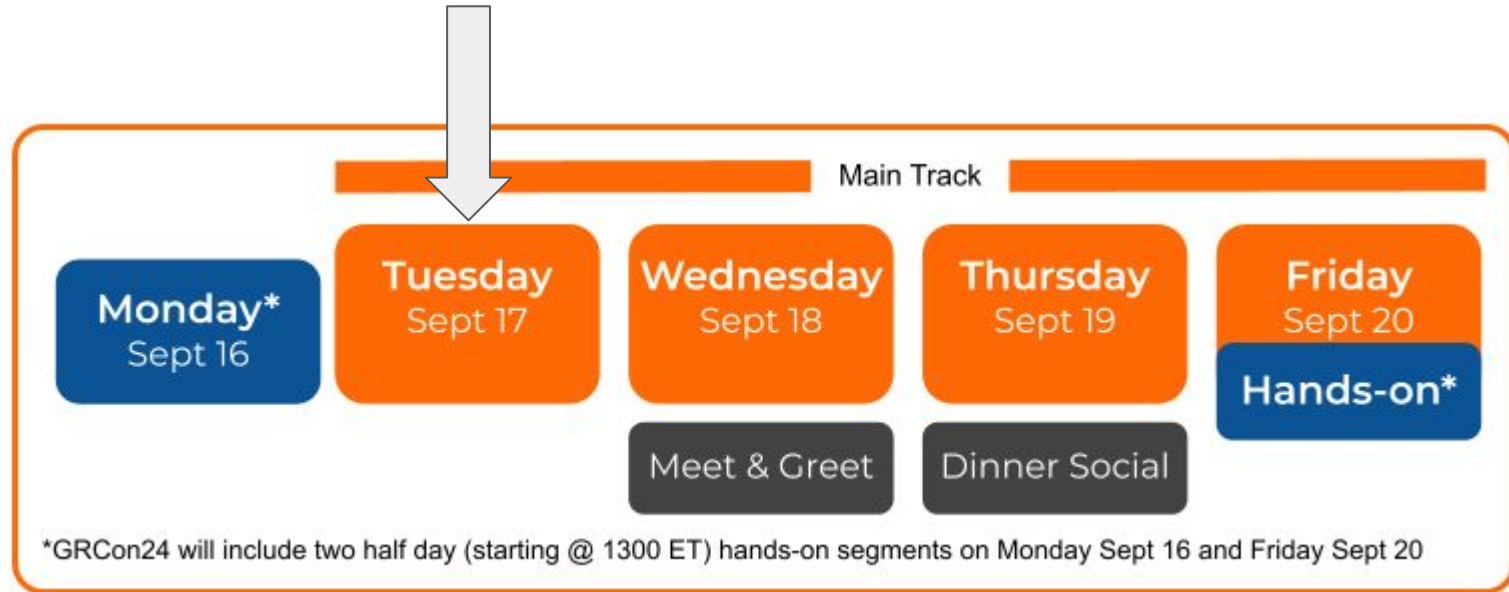**jmorman@gnuradio.org**

Senior Research Scientist

Signal processing algorithm and code development for SDR applications

jmorman@peratonlabs.com

Week at a glance

Main Track

Monday*
Sept 16

Tuesday
Sept 17

Wednesday
Sept 18

Thursday
Sept 19

Friday
Sept 20

Hands-on*

Meet & Greet

Dinner Social

*GRCon24 will include two half day (starting @ 1300 ET) hands-on segments on Monday Sept 16 and Friday Sept 20

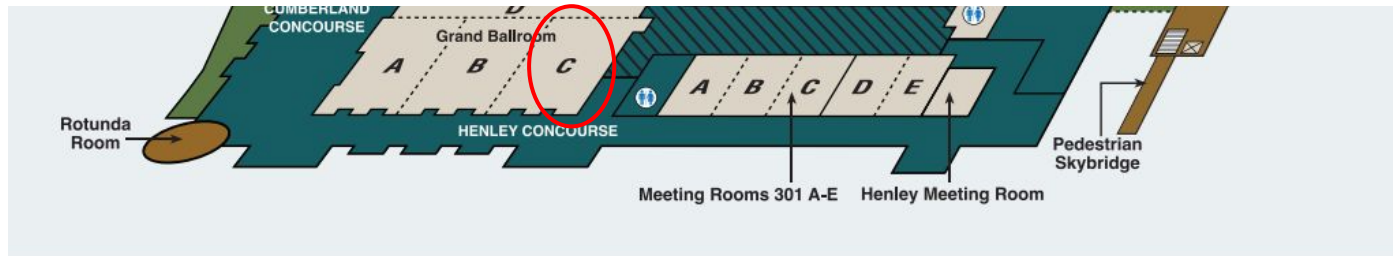# Useful Information

Food and beverages

     AM and PM breaks (snacks, coffee)

     Lunch each day at noon

     Social events - Wednesday and Thursday

Breaks and Lunch in Expo Hall (Ballroom C)

Chat Server

Join the Matrix!

https://chat.gnuradio.org

Discussions and info during the event

Chat and development year round!

GRCon24 Public Space

Welcome to

GRCon24

🌐 Public space · 19 members

Welcome to the GNU Radio Conference 2024

🔍 Search names and descriptions

Rooms and spaces

H Helpdesk (GRCon'24) ✓ Joined
26 members · Whatever the question at GRCon'24 – we're here to help

T Talks (GRCon'24) ✓ Joined
28 members · Discussion of the talks at GRCon'24

B Backstage (GRCon'24) ✓ Joined
18 members · Where presenters, organizers, and boothers meet

C Capture the Flag (GRCon'24)
34 members · https://ctf-2024.gnuradio.org/

✏️ Docs ✓ Joined
452 members · Working on GNU Radio's Documentation (Wiki, in-source docume

📡 Ham Radio ✓ Joined
558 members · Using GR in Amateur Radio – Please take the Radioconda Survey
https://saneuxdesign.survey.fm/radioconda-survey

🌐 Educators-to-Educators ✓ Joined
298 members · Discussing how to use GNU Radio in education

Keynotes

Jack Dongarra
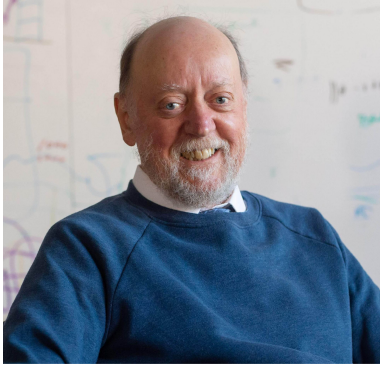
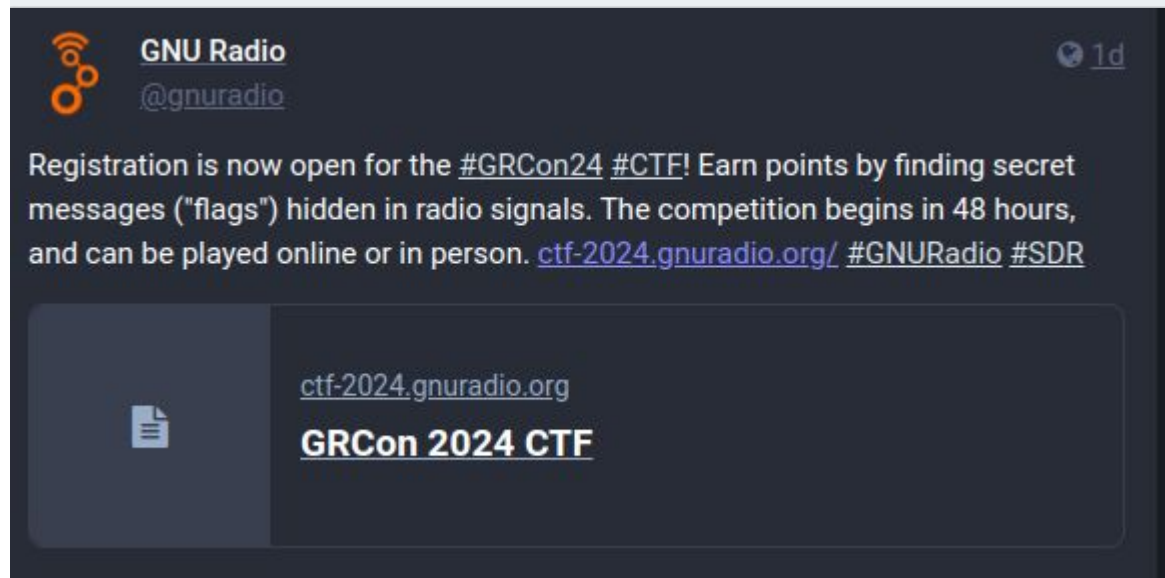Shahriar Shahramian
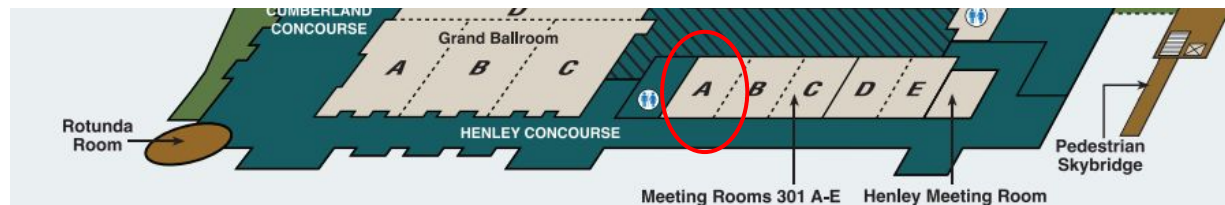
Philip Erickson

Kristina Collins

Capture the Flag

CTF Room – 301A

@argilo

GNU Radio
@gnuradio   1d

Registration is now open for the #GRCon24 #CTF! Earn points by finding secret messages ("flags") hidden in radio signals. The competition begins in 48 hours, and can be played online or in person. ctf-2024.gnuradio.org/ #GNURadio #SDR

ctf-2024.gnuradio.org
GRCon 2024 CTF

HAM Radio Exams

Wednesday 1PM, 301B

gnuradio.org/grcon24

Amateur Radio License Exams

Amateur Radio License Exams (In-Person Only)

During GRCon24 we will be hosting Amateur Radio license exams for those interested in obtaini

Amateur Radio License Exams will be offered on **Wednesday Sept. 18 at 1:00 PM**.

There are study guides and trial exam tests available for *free* online:

- Dan Romanchik No-Nonsense Study Guides
- ARRL trial license testing ARRL Exam Review

Details About the Exams

Exams Available

All three exam levels are available: Technician, General, and Extra. Applicants may take any exam
example, the Technician Class exam does not have to be passed to take the General Class exam

Exams are closed book. No books, notes, or any other materials are allowed.

Applicants who are not successful may be allowed, at the discretion of the VEs, to retest at the s
exams that are available, more than once, to determine whether they were ready to take their lic

FCC Registration Number (FRN)

The FCC requires you to use a Federal Registration Number (FRN). The FRN is a unique number

Workshops
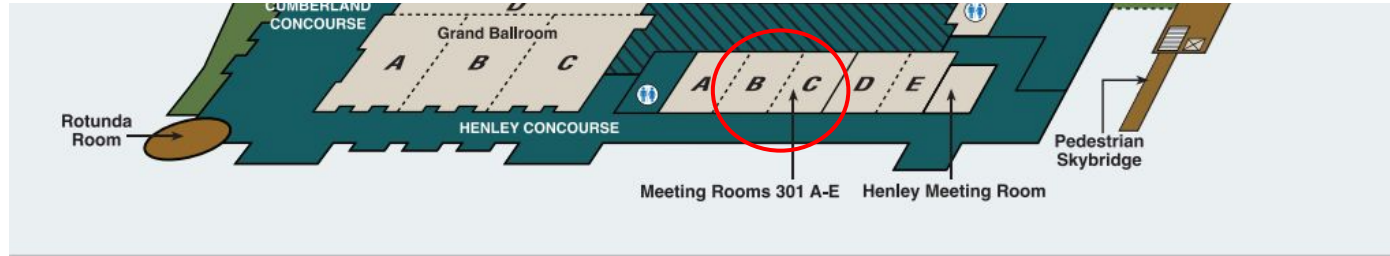
Basics of SDR
USRP FPGA Processing Using the RFNoC Framework
Getting Started with GNU Radio in the Classroom
Introduction to RF Processing for Satellite Constellations

Fast Track to Designing FIR Filters with Python
Quick Start on Control Loops with Python
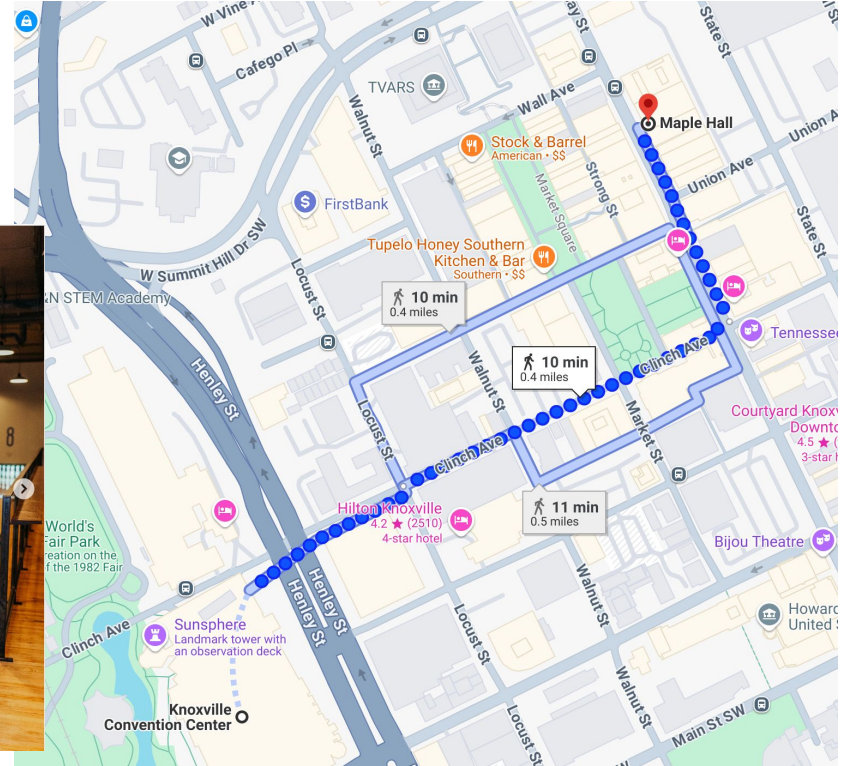
Dan Boschen
Invited Workshops

Sunsphere

5PM - 8PM **Wednesday**
Meet&Greet Social
Drinks + hors d'oeuvres

Maple Hall

6 PM **Thursday**

Dinner + Drinks + Bowling!

Our Organizers

Samantha Palazzolo

Barry Duggan

Toby Flynn

Seth Hitefield

Andrej Rode

Marcus Müller

Neel Pandeya

Josh Morman

Helping with the conference

Thank you to everyone who registered early!

GRCon25 Planning Session Friday!

Our Sponsors

DIAMOND

Our Sponsors

PLATINUM

Our Sponsors

GOLD

Our Sponsors

SILVER

Our Sponsors

Qoherent

ANDRO
androcs.com   Leading Edge Communications!

MYTEK

Doug Forster W6AXR/7

What is the GNU Radio Project?

The codebase of the core, VOLK, and SigMF

The dozens of supporting projects and infrastructure

The active contributors

The ecosystem of modules, applications, and interfaces

This conference, EU GNU Radio Days, other events

You

Where is GNU Radio Used

Wireless Communications

RADAR

4G/5G/6G

Radio Astronomy

Spectrum Monitoring

IOT and Sensors

Space Comms

!!Particle Accelerators!!

Education

Amateur Radio

Physics Research

Security Research

Public Safety

Citizen Science
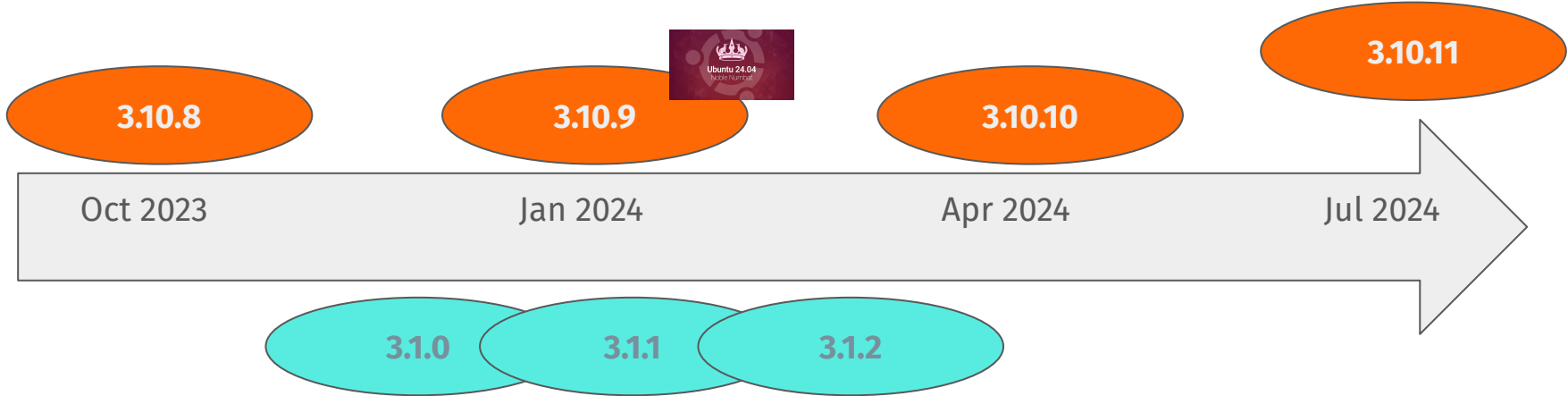
Transportation

Recreation (CtF)

Weather

. . .

Medical

RFML

THEME
GNU Radio enables innovation in
scientific applications

Packaging

Installing GNU Radio has gone from headache to trivial over the past several years

Thanks to the packagers in our community

Debian(/Ubuntu) - Maitland Bottoms

RadioConda - Ryan Volz

...

josh@josh-Alienware-m15-R3:~$ sudo apt install gnuradio
[sudo] password for josh:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  gnuradio-dev libboost-filesystem1.83-dev libgnuradio-analog3.10.9t64
  libgnuradio-audio3.10.9t64 libgnuradio-blocks3.10.9t64
  libgnuradio-channels3.10.9t64 libgnuradio-digital3.10.9t64
  libgnuradio-dtv3.10.9t64 libgnuradio-fec3.10.9t64 libgnuradio-fft3.10.9t64
  libgnuradio-filter3.10.9t64 libgnuradio-iio3.10.9t64
  libgnuradio-network3.10.9t64 libgnuradio-pdu3.10.9t64
  libgnuradio-pmt3.10.9t64 libgnuradio-qtgui3.10.9t64
  libgnuradio-runtime3.10.9t64 libgnuradio-soapy3.10.9t64
  libgnuradio-trellis3.10.9t64 libgnuradio-uhd3.10.9t64
  libgnuradio-video-sdl3.10.9t64 libgnuradio-vocoder3.10.9t64
  libgnuradio-wavelet3.10.9t64 libgnuradio-zeromq3.10.9t64 libvolk
  python3-networkx python3-pyqt5.qwt soapysdr-tools
Suggested packages:
  gqrx-sdr gr-fosphor gr-osmosdr rtl-sdr uhd-host python-networkx
  python3-pydot python3-pygraphviz python-pyqt5.qwt-doc
The following NEW packages will be installed:
  gnuradio gnuradio-dev libboost-filesystem1.83-dev
  libgnuradio-analog3.10.9t64 libgnuradio-audio3.10.9t64

Packaging status	
Alpine Linux 3.19	3.10.7.0
Alpine Linux 3.20	3.10.9.2
Alpine Linux Edge	3.10.11.0
ALT Linux p9	3.7.13.4
ALT Linux p10	3.9.1.0
ALT Linux p11	3.10.11.0
ALT Sisyphus	3.10.11.0
Arch	3.10.10.0
Arch Testing	3.10.11.0
Arch Linux 32 i686	3.9.2.0
Arch Linux 32 pentium4	3.9.2.0
Arch Linux ARM aarch64	3.10.10.0
AUR	v3.11.0.0g...
BlackArch	3.10.10.0
Buildroot 2023.02.x	3.10.4.0
Buildroot 2023.05.x	3.10.4.0
Buildroot master	3.10.11.0
Chocolatey	3.8.2.1
Debian 10	3.7.13.4
Debian 11	3.8.2.0
Debian 12	3.10.5.1
Debian 13	3.10.11.0
Debian Unstable	3.10.11.0
deepin 20	3.7.13.4
Devuan 3.0	3.7.13.4
Devuan 4.0	3.8.2.0
Devuan Unstable	3.10.11.0
EPEL 7	3.7.11
EPEL 8	3.8.0.0
EPEL 9	3.10.10.0
Fedora 26	3.7.11
Fedora 27	3.7.11
Fedora 28	3.7.13.4
Fedora 29	3.7.13.5

GNU Radio Maintenance

Looking for additional maintainers!

-   Be a recognized part of the maintenance team
-   Own a module or group of modules (e.g. gr-qt, gr-soapy, gr-zeromq)
-   Be responsible for ensuring relevant PRs are reviewed and merged
-   Help backport merges to maint-3.10

Reduce the number of maintenance releases

-   Quarterly has been great, but a lot of overhead
-   Release management help appreciated

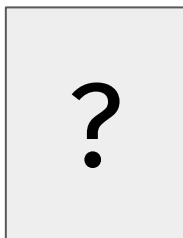Email: info@gnuradio.org for more information
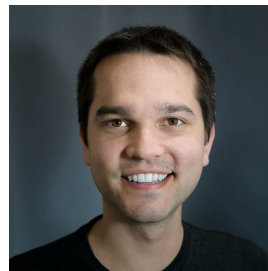
How is GNU Radio Governed?

GR BOARD

MARC LICHTMAN - VP

UPCOMING ELECTION

?

JOSH MORMAN - PRESIDENT

SETI INSTITUTE

DEREK KOZEL - PI

General Assembly

Martin Braun - Community/Ecosystem

Andrej Rode - Infrastructure

Bastian Bloessl - Architecture

Johannes Demel - VOLK

Jeff Long - Maintenance

Seth Hitefield - GRC

Josh Morman - President

Marc Lichtman - Vice President

Derek Kozel - SETI PI

Marcus Müller - Chief Architect

Nate Temple - Community

Philip Balister - Embedded

Samantha Palazzolo - GRCon

Jacob Gilbert - SigMF

Jean-Michel Friedt - Academic Engagement

Ben McCall - Documentation

John Sallay - GR 4.0

Teams

GNU Radio Conference - grcon@gnuradio.org

Architecture architecture@gnuradio.org

GRC - grc@gnuradio.org

Documentation - docs@gnuradio.org

SigMF - sigmf@gnuradio.org

VOLK - volk@gnuradio.org

Infrastructure - admin@gnuradio.org

Education and Academic Outreach - educators to educators chat

Getting Involved

Join Chat - https://chat.gnuradio.org

Join the Mailing List - discuss-gnuradio

File issues - https://github.com/gnuradio

 Review issues, add details, recreate ones

Improve the tutorials - https://tutorials.gnuradio.org

Give a talk about GNU Radio

Getting Involved

Google Summer of Code
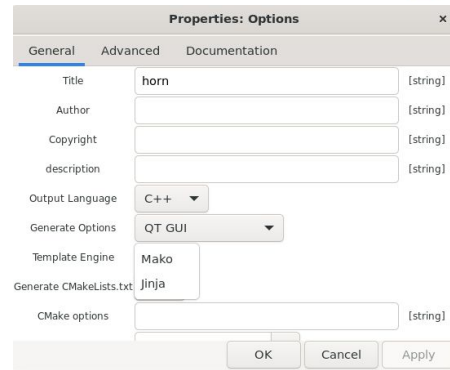
- GRC: Standalone application and pluggable workflows
  - **Zaky Hermawan**
  - Mentors: Håkon Vågsether, Sebastian Koslowski

https://github.com/ZakyHermawan/grc

- Forward Error Correction
  - **Kayla Comer**
  - Mentors: Daniel Estevez, Andrej Rode

https://github.com/kaylacomer/gr-fec_dev

Properties: Options

General	Advanced	Documentation

Title	horn	[string]
Author		[string]
Copyright		[string]
description		[string]
Output Language	C++	
Generate Options	QT GUI	
Template Engine	Mako	
Generate CMakeLists.txt	Jinja	
CMake options		[string]

OK   Cancel   Apply

Forward Error Correction blog

GNU Radio project for Google Summer of Code

- 2024-08-29 06:40 Final blog post: project overview and conclusions
- 2024-08-20 08:45 Week 10: August 12-16
- 2024-08-12 08:42 Week 9: August 5-9
- 2024-08-05 12:53 Week 8: July 29 - August 2
- 2024-07-19 16:27 Week 7: July 15-19
- 2024-07-15 07:09 Week 6: July 8-12
- 2024-07-08 09:02 Week 5: June 24-28
- 2024-06-24 10:13 Week 4: June 17-21
- 2024-06-17 10:13 Week 3: June 10-14
- 2024-06-07 10:01 Week 2: June 3-7

EU GR Days 2024

Videos are live!
youtube.com/gnuradioproject
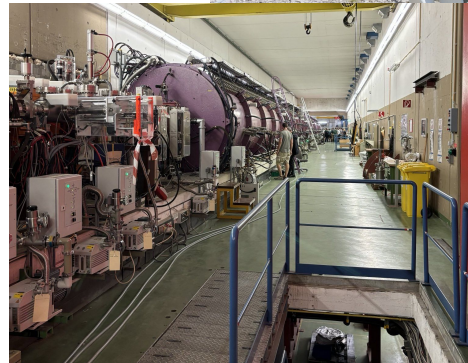
Held at GSI/FAIR in Darmstadt

4 days of introductory tutorials and developer workshops

Focus on the development of GR 4.0

GR 4.0

Dr. Ralph J Steinhagen

GNU Radio 4.0: Use-Cases at the GSI/FAIR Accelerator Facility & an Overview of New Features and Significant Enhancements

Sep 19, 2024, 10:00 AM

45m

Project Talk   Project Talk

Speaker

Dr Ralph J. Steinhagen (GSI Helmholtzzentr...

FAIR The Universe in the Laboratory

Modern and much Simpler C++ User-API
Intrinsic SIMD support

C++ 20/23   std::simd

```
1  template<typename T>
2  requires (std::is_arithmetic<T>())
3  struct BasicMultiplier : public Block<BasicMultiplier<T>> {
4    IN<T>    in;
5    OUT<T>   out;
6    T        scaling_factor = static_cast<T>(1);
7
8
9    template<t_or_simd<T> V> // → intrinsic SIMD support
10   constexpr V processOne(const V &a) const noexcept {
11     return a * scaling_factor;
12   }
13 };
14
15 ENABLE_REFLECTION_FOR_TEMPLATE(BasicMultiplier, in, out, scaling_factor);
```

European GNU Radio Days 2024
27th - 30th August
Darmstadt, Germany +

...development will be presented including outlining the benefits and necessity of ...re, and its usage at the international accelerator facility FAIR.

FAIR GSI

A. Krimm & R. Steinhagen: GNU Radio 4 developer tutorial, introduction to graph-based signal processing

HELMHOLTZ

EU GR Days

EU GR Days

GSI Tour: Jens Stadlmann & Shahab Sanjari*

Jean-Michel Friedt Dr. Ivan Čukić Dr. Matthias Kretz Alexander Krimm Dr. Semen Lebedev

Tutorials

Project Vision

STRENGTHEN	Ongoing improvement of the core framework
SPREAD	Grow and expand the reach of the project
SUSTAIN	Keep the ecosystem healthy and active

Strengthen

- Make GNU Radio continually improving and feature-rich
- Maintain GNU Radio's position as the leading open-source SDR framework for rapid prototyping and real-time signal processing applications.
    - Make the framework better and more accessible
    - Make the framework more performant
    - Make the framework more stable and consistently maintained

WHY?

GNU Radio enables innovation in scientific applications

GNU Radio User Base

Private OOTs

GR Flowgraphs

GR-based applications

Packaged Distributions

Public Out of Tree Modules

GNU Radio 3.x

Dependencies

Hardware Platforms

ALL MODERN DIGITAL INFRASTRUCTURE

A PROJECT SOME RANDOM PERSON IN NEBRASKA HAS BEEN THANKLESSLY MAINTAINING SINCE 2003

GR4

GR 3.x
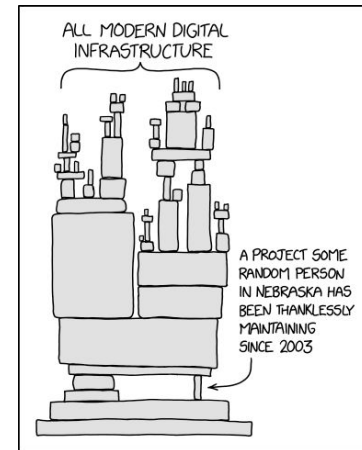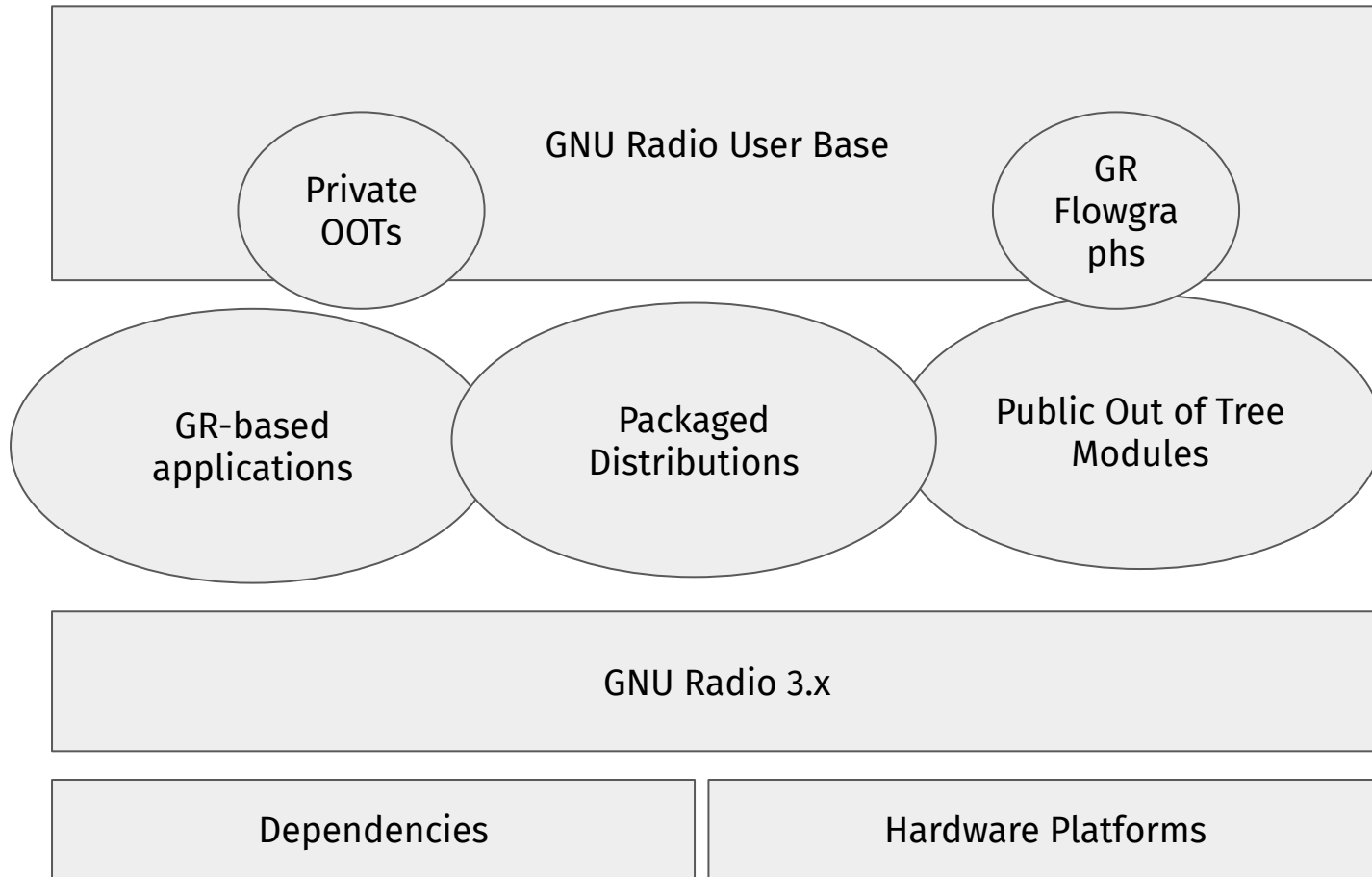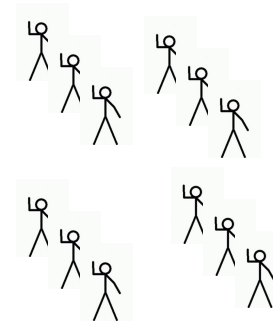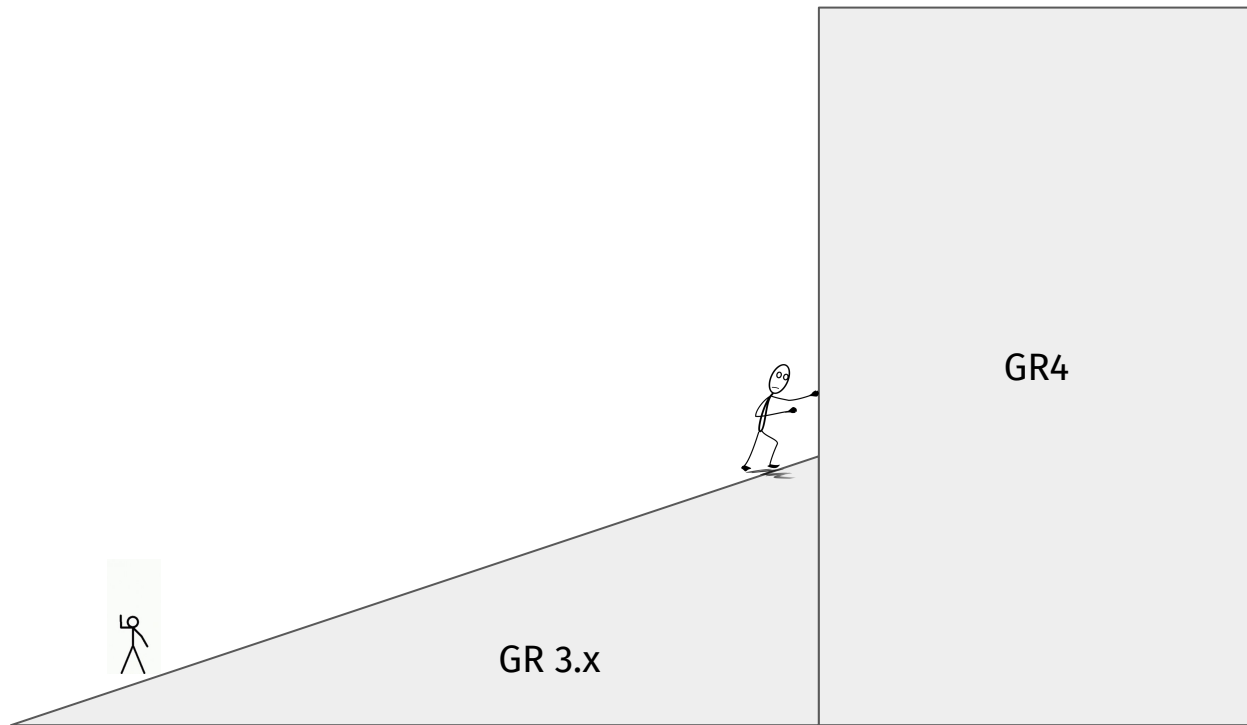
Improving GNU Radio with the ecosystem in mind

Changes to the framework have to either:

1) Not disrupt the existing ecosystem
   a) Even small API changes have not been adopted by all OOTs
2) Provide enough benefit to justify a "jump"
   a) Benefit means different things to different users
   b) Some users happy with GR as a prototyping framework

GRC Users

Block Developers

Python – C++

Core Developers

GR 4.0 Timeline

2019: Benchmarking of GR scheduler, identification of optimization opportunities. Attempts to implement in current codebase

2020: SDR 4.0 - enhance GNU Radio capabilities on to heterogeneous compute platforms

2020: newsched project - fresh start on architectural concepts

2022: GRCon22 - newsched modularity and usability demonstration

2022: GSI/FAIR commits resources and takes on deeper changes to scheduler and API

2024: EU GR Days - @GSI/FAIR hands on workshops

2024: EU GR Days - Demonstration of packet modem in GR 4.0

Current State of GR 4.0

For GNU Radio to be used in critical infrastructure and real-world applications, it must meet higher standards for safety, cybersecurity, and product liability.

- Type Safety
- Modern C++ and Best Practices
- Lean, clean codebase

Maximize compute performance on modern CPUs by unleashing the power of modern compilers

- Lock Free buffers
- constexpr optimization
- std::simd standardization
- Block Merging

Current State of GR 4.0

Improved Usability

- User customizable schedulers
- Easy integration of heterogeneous, distributed, and embedded compute
- Asynchronous packet events a first class citizen
- More liberal licensing (LGPL currently agreed upon, open to other options)
- Simplified Block API

How do we push GR 4.0 forward

4.0
CORE

Common Blocks

API

Schedulers

Runtime

Applications

Custom Blocks

GR 4.0 Packet Modem
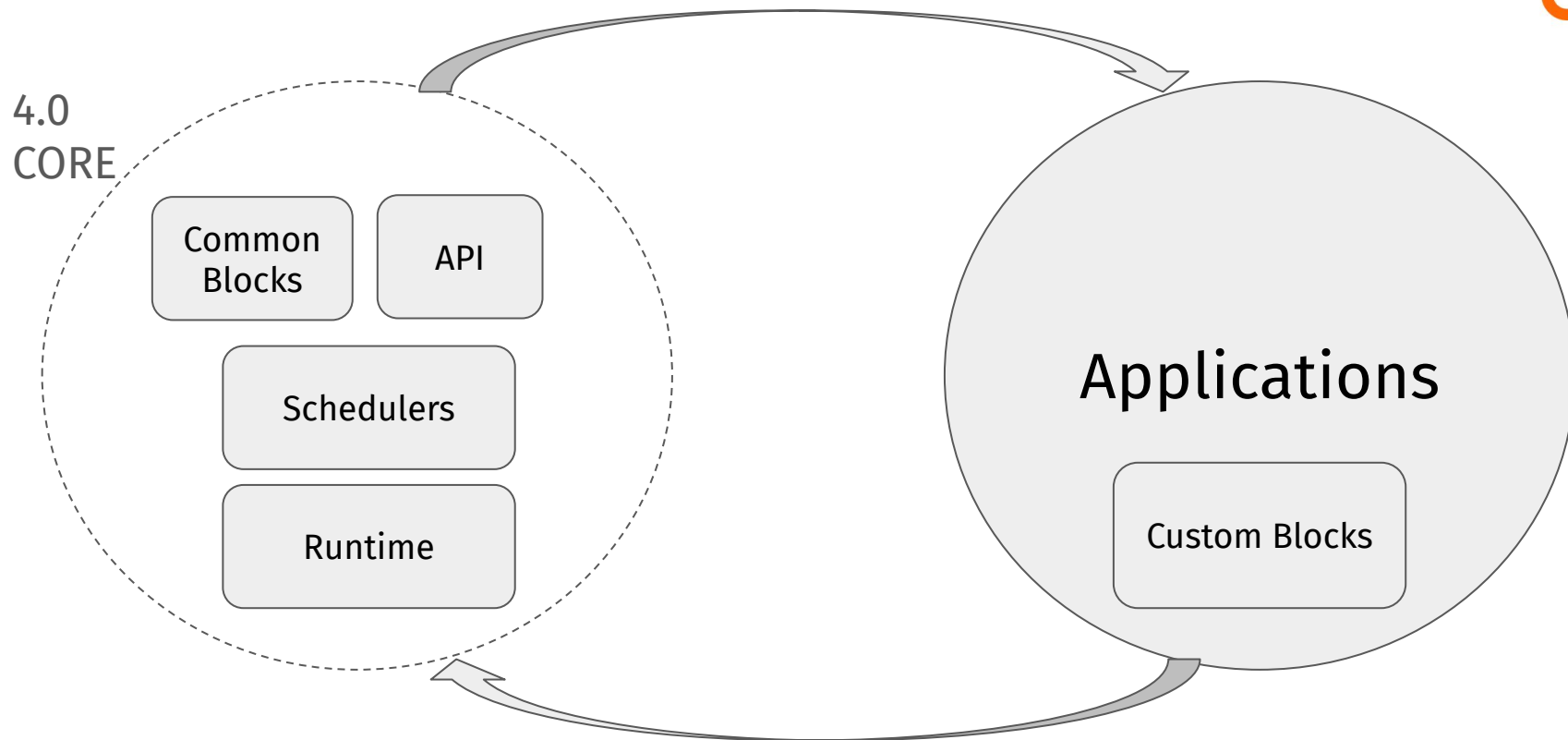
https://github.com/danielestevez/gr4-packet-modem

Daniel Estevez - full modem implementation

Using ARDC grant funds
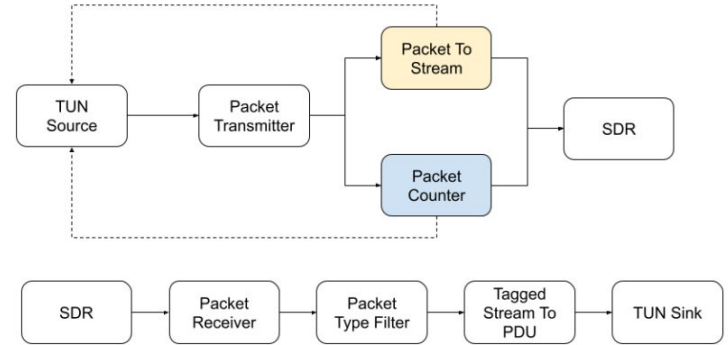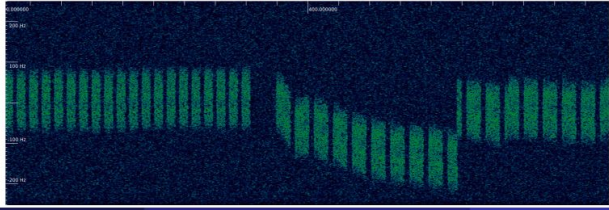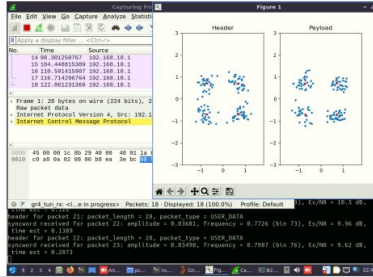
Spread

- Increase the footprint of GNU Radio in educational programs - University courses, Community College, High School
  - Prepare the next generation of signal processing engineers with the tools to develop real-time applications (as opposed to MATLAB/Python scripts)
  - Usability for beginners, installation, etc.
- Better marketing and outreach
- Training Opportunities

WHY?
Without shared framework, fractured ecosystem, non-portable solutions

Hard to quantify the pervasiveness of GR Usage

Academic Papers Mentioning GNU Radio

gnuradio

@ 22   ☆ 4,975   ⚡ 9.4   <> C++

GNU Radio – the Free and Open Software Radio Ecosystem
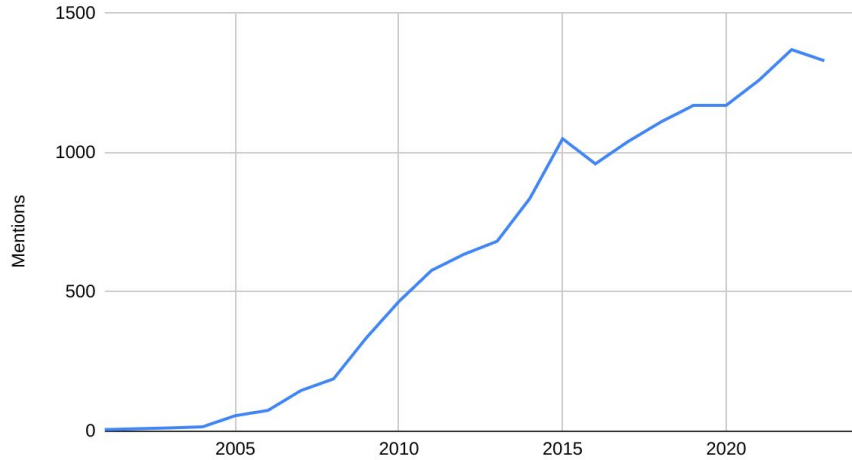
Edit Pins ▾   Watch 234 ▾   Fork 1.9k ▾   Star 5k ▾

Visitors

21,483 Views   4,038 Unique visitors

ANACONDA.ORG   Search Anaconda.org   About Anaconda Hel

conda-forge / packages / gnuradio-grc 3.10.11.0

GNU Radio Companion graphical flowgraph interface

copied from cf-staging / gnuradio-grc

Conda   Files   Labels   Badges

License: GPL-3.0-or-later
Home: https://gnuradio.org/
Development: https://github.com/gnuradio/gnuradio
Documentation: https://gnuradio.org/doc/doxygen/
1083209 total downloads
Last upload: 1 day and 8 hours ago

GNU Radio in the Classroom

Neil Rogers
Professor, USAFA

Thursday 1PM
301C

Getting Started with GNURadio in the Classroom

📅 Sep 19, 2024, 1:00 PM

🕐 2h

📍 301C (Knoxville Convention Center (KCC))

Speaker

👤 Neil Rogers (USAFA)

Description

An increasing number of educational institutions
make use of SDRs as a low-cost means of demonstrating
a wide range of communication system applications.
However, due to the interrelationship between various
hardware and software configurations, this approach introduces
significant logistical and pedagogical complexities.
As with any open source project, getting started with
GNURadio in the classroom can be a daunting prospect;
furthermore, the wide range of available hardware can
make navigating the landscape even more complicated. This
short course aims to fill this gap by providing a sufficient
foundation for classroom SDR usage, including lessons
learned from several years experience in the following
areas:
• SDR hardware overview and recommendations
• SDR configuration
• Software configuration
• Curriculum topics
• Potential hands-on projects
• Question/Answer time

GNU Radio Based Community College Curriculum

Bringing Radio Astronomy to Community Colleges

📄 📅

📅 Sep 17, 2024, 1:45 PM

🕐 30m

📍 Ballroom AB (Knoxville Convention Center (KCC))

Talk ◈ SETI Main Track

Speakers

👤 Dr Vishal Gajjar (SETI Institute)
👤 Dr Simon Steel (SETI Institute)

Description

Almost 40% of students nationally take their introductory astronomy course at a community college. Generally resource challenged but serving a vital service to students from non-traditional and minority demographics, community college instructors are constantly looking to keep their courses relevant and cutting-edge. Radio astronomy has rarely featured significantly in these "Astro-101" classes, both because the concepts are esoteric, and because of suitable resources, such as data sets, training, and equipment. This is about to change. Thanks to an ARDC grant, the SETI Institute has developed a designed for introductory astronomy at community college, with a simple to use SDR interface and access to the data and telescopes of the Institute's Telescope Array in Northern California. This talk will describe the collaboration with NASA's Community College Network, the development of the curric software interface and the first training workshop training for community college instructors.

Talk Length 30 Minutes

Primary authors

👤 Dr Vishal Gajjar (SETI Institute)
👤 Dr Simon Steel (SETI Institute)

A R D C
AMATEUR RADIO DIGITAL COMMUNICATIONS

Empowering the future of amateur radio and digital communications

About   Apply for a Grant   News and Updates   44Net   Resources   [Search Here] SEARCH

Grant: Connecting the Cosmos: Developing Innovative GNU Radio-Based SETI Curriculum

Date: April 2023
Amount: $99,393

The Search for Extraterrestrial Intelligence (SETI) Institute is a non-profit research organization that is committed to scientific education and outreach, with a focus on making SETI research appealing to both students and the general public. The SETI Institute has created an array of educational resources, such as workshops, outreach programs, and online courses, all of which have reached millions worldwide. However, when it comes to radio communication and digital signal processing for students in community colleges, opportunities for practical training are limited.

This grant will provide funding to develop and deploy a 12-week radio SETI curriculum that aims to teach the basics of signal processing and digital communications. Specifically, they will be utilizing GNU radio software and rich data created by the SETI Institute's Allen Telescope Array, all with the end goal of preparing the next generation of amateur radio communication experts.

Learn more at https://gajjarvishal.com/teaching.html.

Amateur Radio Digital Communications (ARDC) is a private foundation that exists to support amateur radio and digital communication science and technology. We do this through making grants (including support for scholarship programs and research & development projects) and managing 44Net.

For more information, email us anytime: contact@ardc.net.

[SIGN UP FOR OUR NEWSLETTER]

[JOIN OUR COMMUNITY DISCUSSION ON GROUPS.IO]

49

Communication Systems Engineering with GNU Radio: A Hands-on Approach 1st Edition

by Jean-Michel Friedt (Author), Herve Boeglen (Author)

See all formats and editions

✓ **Pre-order Price Guarantee.** **Terms** ⌄

An approachable guide to an invaluable radiofrequency communication toolkit

Software-defined radio (SDR), which emerged in the 1990s, has become a core development method in certain high-profile fields, including military and space communications. High cost and problems with hardware availability, however, prevented this technology from being widely disseminated. The advent of low-cost hardware beginning in the 2010s, however, has made GNU Radio—the leading open-source software toolkit for developing SDR systems—an increasingly viable and even critical tool for a new generation of radiofrequency communication engineers.

Communication Systems Engineering with GNU Radio provides an accessible overview of this toolkit and its applications. Beginning with the fundamentals of using GNU radio for digital signal processing, the volume then moves to the practicalities of decoding data and the advantages of accessing raw data normally unavailable in hardware-defined radiofrequency receivers. The result is a potentially crucial tool for engineers looking to adopt this cost-effective and flexible standard for transmitting and processing radiofrequency signals.

Readers will also find:

- A careful balance of radio communications theory with GNU Radio practicalities
- Practical implementation examples employing well-developed open-source GNU Radio platforms
- Extensive accompanying documentation and explanation

Communication Systems Engineering with GNU Radio is ideal for graduate and undergraduate students in communications systems courses, as well as professionals working in SDR.

Available for pre-order
https://a.co/d/cXoltKj

COMMUNICATION SYSTEMS ENGINEERING WITH GNU RADIO

A HANDS-ON APPROACH

JEAN-MICHEL FRIEDT • HERVÉ BOEGLEN

GNURadio
THE FREE & OPEN SOFTWARE RADIO ECOSYSTEM

WILEY

Matrix Chat room for Educators

chat.gnuradio.org

Educators-to-Educators

#edu:gnuradio.org

🌐 Public room   🔓 Not encrypted

Discussing how to use GNU Radio in education ⌄

Sustain

- Future-proof the leadership of the organization
    - Continually build leadership team - great opportunity for developing professionals
    - Move beyond all-volunteer
- Funding beyond GRCon
- Industry and Government partnerships
    - Partnership Program*
- Funding via external development efforts
    - Government funded efforts
        - Who can fund and execute large scale projects
        - E.g. DARPA SDR 4.0
    - Spirit of Public Money / Public Code
    - Actively engage with current and potential users of GNU Radio

WHY?

Maintaining a healthy ecosystem requires a cohesive and active organization able to make good decisions for the broader community

GNU Radio Funding

➔ **GNU Radio Conference**

➔ **Grants**

➔ **Donations**

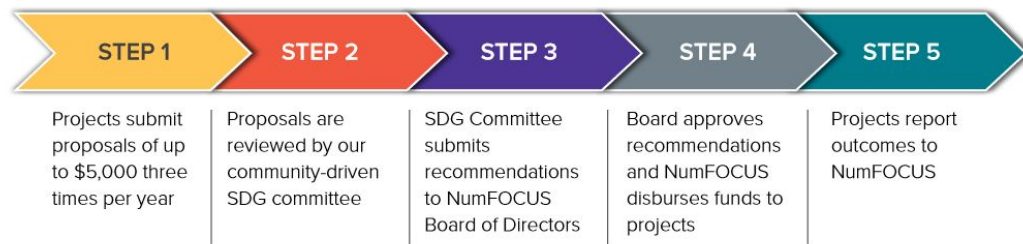➔ ...

➔ **Sustainability**

GR Small Development Grants?

Grant Ideas

Similar to the GSoC Ideas page, this is a list of things we could potentially ask for grant money to accomplish, or even just volunteers who want something specific to dive into:

The NumFOCUS Small Development Grants program is a community collaboration which addresses project needs while also engaging dedicated volunteers. See the process below:

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Projects submit proposals of up to $5,000 three times per year	Proposals are reviewed by our community-driven SDG committee	SDG Committee submits recommendations to NumFOCUS Board of Directors	Board approves recommendations and NumFOCUS disburses funds to projects	Projects report outcomes to NumFOCUS

Mission:

   To support, promote, and enhance digital communication and broader communication science and technology

   To promote amateur radio, scientific research, experimentation, education, development, open access, and innovation in information and communication technology.

https://ampr.org

ARDC Grant

- Installation of GNU Radio and out-of-tree modules (OOTs)
  - Native installers integrated with CI - Kitware
- Ongoing software maintenance and support
  - Marcus Mueller thrashing the issue tracker
- GNU Radio Companion (GRC) (Haakon V)
  - gnuradio-companion --qt
- Updated Tutorials
  - Wavewalker DSP
- Documentation Infrastructure
  - Bailey Campbell
- Documented Packet Modem Example with GR4
  - Dani Estevez

Grant: GNU Radio Usability Enhancements

Date: March 2022
Amount: $263,011

GNU Radio is a free, open-source software-development toolkit that provides signal processing blocks to implement software radios. GNU Radio is always striving to be accessible to anyone across the globe, regardless of which operating system they are using and how much experience they have with wireless communications and digital signal processing. Historically, Windows operating system users have not had adequate support, despite it being the operating system used by nearly all K-12 students. Increasingly, macOS is becoming the platform of choice for both students and individuals. GNU Radio wants to be more intuitive and make it easier to install third-party modules known as out-of-tree modules (OOTs).

The GNU Radio project has identified a number of improvements to GNU Radio that it hopes will make GNU Radio easier to use, more accesible, and easier to maintain. These improvements are broken down into the following categories:

- Installation of GNU Radio and out-of-tree modules (OOTs)
- Documentation
- Ongoing software maintenance and support
- GNU Radio Companion (GRC)

The projects were carefully chosen to extend and advance work already underway, but hindered by lack of specialist experience. This grant from ARDC will allow GNU Radio to hire experts specialized in each area. We believe the specific GUI projects this ARDC grant would fund will also give the new GRC the final push that it needs to become the interface that ships with GNU Radio and provides users a much-improved experience. For each improvement category described above, one or more mentors (who will be volunteers from the GNU Radio leadership or core developers) will guide the work. These mentors will help the contractors stay aligned to the goals and offer feedback at periodic intervals. This grant will unlock the considerable existing capabilities to a large population in a timely manner and bring new people into the community.

Learn more at https://www.gnuradio.org/.

GNU Radio Industrial Advisory Board

Motivation:
- Guarantee the continued maintenance and expansion of GNU Radio while providing benefit to stakeholders
- Ensure the long term financial stability of the organization

Wednesday@14:30 - Introduction in Main Ballroom
Wednesday@15:20 - Info Session in *Rotunda*

Frank Howley
Director of Corporate Engagement
SETI Institute

How to Support GNU Radio

Get Involved

Advertise that you use GNU Radio

Write a letter of support

Publish a whitepaper

Join a team

Explore Industrial Advisory Board