Eirik Rolland Enger

PhD candidate

PhD candidate at the complex systems modelling group at the Department of Physics and Technology, University of Tromsø. Fond of abstract ideas, free open-source software and skiing.

Education

2020–2024 (expected) *PhD, Climate Physics at the University of Tromsø* (Tromsø, Norway)

Thesis title: Global temperature response to volcanic activity

2015–2020 *MS in Space Physics at the University of Tromsø* (Tromsø, Norway)

Thesis title: A model for IS spectra for magnetized plasma with arbitrary isotropic velocity distributions. Link: `https://hdl.handle.net/10037/19542`

Experience

2018–Now *Teacing Assistant at University of Tromsø* (Tromsø, Norway).

- FYS-2000 Quantum Mechanics (S18)
- FYS-0100 Basic Physics (F18,F19)
- FYS-2009 Sun, planets and space (F20,F21)
- FYS-3002 Techniques for investigating the near-earth space environment (S21)

2019 (2 months) *Summer student at FFI — Norwegian Defence Research Establishment* (Kjeller, Norway).

During eight weeks in the summer of 2019 I worked at the FFI, continuing the project on software defined radios from 2018. The goal this summer was to be able to do real time spoofing of a GNSS (Global Navigation Satellite System) receiver, meaning it should be possible for the spoofer to make adjustments to the path the fake signal gives, in real time. Multiple open-source projects was used, some of which I modified or wrote myself during the project. The added code was written in Python, and the complete project can by found in my **bladeGPS-Game repository**. The project ended in a successful demonstration of real-time controlling of a spoofing signal.

2018 (3 months) *Summer student at FFI — Norwegian Defence Research Establishment* (Kjeller, Norway).

During nine weeks in the summer of 2018 I worked at the FFI on a project about software defined radios for use with jamming and spoofing of GNSS receivers. Open-source projects was used along with a number of different hardware, most notably the **USRP**. At the end of the period, spoofing of both GNSS receivers and a phone was demonstrated, and a report documenting the project was written.

Technical Experience

Website I have a website called **flottflyt.com** where I put up projects I work in my spare time, as well as any other content I find interesting. For example I have my own NFT storefront on the website that uses the **metaplex** protocol on the **Solana** blockchain.

Open Source I maintain the project **ncdump-rich** which is published on **PyPI**. This is a previewer for quickly showing formatted metadata in `.nc` files, written in python. I also contributed to **stpv** which is a general previewing tool to be used within the terminal.

Programming Languages **python:** Have been programming in python for four years with increasing intensity, creating multiple projects over the years. See my **github** for a closer look at the different repositories.

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