Duncan Joly

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Objective

- Motivated, accomplished leader with experience in spacecraft/wireless communications and industry/academic collaboration seeking an industry position in computer science

Education

Bachelor of Science in Computer Science **Expected Spring 2026**

College of Science and Engineering, University of Minnesota - Twin Cities, Minneapolis, MN

- College of Science and Engineering Dean's List Fall 2024, 3.52 overall GPA
- Related coursework: Python, C, Java, operating systems, computer networks, secure software design, distributed systems, automata theory
- Lando Scholar, Tran Scholar, member of UMN Alumni Mentorship Program

Select Work Experience

Wireless Research Intern - *Two Six Technologies - Arlington, VA / Remote* **May 2025 - Present**

- Leveraged open-source software to create comprehensive GPS emulation suite for HackRF software defined radios to be used in GPS testing company-wide
- Added support for new software defined radio platforms in company SDR abstraction layer, simplifying future development efforts
- Wrote comprehensive unit test suites using pytest to ensure reliable product delivery
- Utilized GitLab for version control and collaborative development, improving team efficiency

Communications Team Lead - *U of MN Small Satellite Research Laboratory - Minneapolis, MN* **February 2024 - Present**

- Implemented data transfer between spacecraft and ground station network using UDP packets in GNURadio
- Worked with industry and governmental space communications experts to insure reliability of all software interfaces on two satellites
- Managed communications team of 8, including undergraduate volunteers, project managers, and former NASA employees
- Coordinated efforts on simultaneous projects, including frequency acquisition, data visualization dashboard, and software engineering
- Designed and implemented persistent Point-to-Point Protocol link over RS-232/UART using pppd and systemd
- Worked with Naval Postgraduate School to allow use of 13-site MC3 satellite ground station network by our IMPRESS satellite
- Wrote interface to Space Test Program communications controller (DICE) on the International Space Station

Undergraduate Research Fellow - *U of MN Networking Research Group - Minneapolis, MN* **February 2023 - Present**

- Implemented pathway for live parameter customization in simulated 5G network using Eurecom's OpenAirInterface and FlexRIC
- Conducted networking efficiency research project using Python, published findings on arXiv (DOI 10.48550/arXiv.2311.10936)
- Contributed to the Linux kernel and open-source research software platforms including OpenAirInterface and FlexRIC
- Assisted Ph.D. students with data analysis, software engineering, and system configuration for academic research papers
- Collaborated with lab members on conference and preprint research (DOI 10.1145/3708468.3711877) (DOI 10.48550/arXiv.2507.20438)
- Accepted National Science Foundation "Research Experiences for Undergraduates" grant to continue research
- Developed technical research skills including literature reviews, project management, professional teamwork, and data analysis

Student A/V Technician - *University of Minnesota - Minneapolis, MN* **September 2022 - Present**

- Operated audio/visual equipment for events on campus, including research presentations, remote conferences, and film nights
- Assisted with equipment setup and operation and provided troubleshooting assistance to various clients

Leadership and Volunteer Experience

Student Member - *U of MN College of Science & Engineering Curriculum Committee - Minneapolis, MN* **September 2025 - Present**

- Contributed to the academic process by providing student perspective on new course proposals and major changes to existing courses

President - *Amateur Radio Club at the University of Minnesota - Minneapolis, MN* **February 2025 - Present**

- Facilitated club registration and acted as a liaison between the group and University of Minnesota administration
- Worked with College of Science & Engineering faculty and staff to promote the interests of the amateur radio community on campus

Leader - *Hack Club - Roseville, MN* **September 2021 - June 2022**

- Designed curriculum for and provided support to 20-member chapter of Hack Club
- Instructed members on penetration testing techniques, including Kali Linux and Aircrack-ng, and use of GitHub and VS Code
- Created practice problems and example projects for members in Python and Java

Founding Member, Policy Review Group Leader - *ISD#623 LGBTQ+ Equity Committee - Roseville, MN* **Spring 2021 - Spring 2022**

- Facilitated partnership between teachers, school board members, and district administration to draft LGBTQ+ inclusion policy
- Educated fellow high school students on politics and community opportunities in the Roseville and Minneapolis, MN areas

Skills and Interests

- **Technical**: 5G, amateur radio (Amateur Extra-class operator), bash, CLion, Git, GitHub, GitLab, Google Workspace, HF/UHF/VHF communication techniques, IntelliJ IDEA, Linux, Microsoft Office, Microsoft Windows, network architecture, OpenAirInterface, Postman, PyCharm, software engineering, space communications, TCP/IP, UDP, Wireshark
- **Programming languages**: C, Java, Python 3
- **Spoken languages**: Modern Standard Arabic (Intermediate level), French (Intermediate level)
- **Professional associations**: Association for Computing Machinery (ACM), ACM SIGCOMM, ACM SIGMOBILE, Institute of Electrical and Electronics Engineers (IEEE), IEEE ComSoc, Internet Society
- **Interests**: Human rights, network & data security, RF, sustainability, trust establishment, wired & wireless telecommunications