jrodal.dev
github.com/jrodal98

Jacob Rodal

jr6ff@virginia.edu
703-283-9318

Education

BS in Computer Science	**University of Virginia**	**Graduating in Dec 2020**

- BS in Computer Science, BA in Statistics. **Cumulative GPA: 3.94**
- Selected Coursework: Algorithms, Machine Learning, Data Structures, Cybersecurity, Software Engineering Methods, Applied Linear Models, Linear Algebra, Probability, Mathematical Statistics

Experience

Research Assistant	**University of Virginia**	**Sept 2019 − Current**

- Investigating the use of MANETs (Mobile Ad Hoc Networks) to enable a connected transport system between autonomous vehicles.
- Currently developing an Android mobile application with Kotlin to test the feasibility of ad-hoc communication between pedestrians and autonomous vehicles.

Software Engineer Intern	**Leidos**	**May 2019 − Sept 2019**

- Contributed to the development of open source simultaneous localization and mapping (SLAM) libraries in order to reconstruct 3-D point cloud models from real time video streams.
  - Added support to allow multiple video streams to contribute towards a single reconstruction.
  - Created bag of visual words vocabulary training pipeline for binary descriptors.
- Led the development of a rust web server capable of directing incoming video data into SLAM processes and directing SLAM data to connected clients.
- Gained experience with computer vision, machine learning, rust, C++, python, docker, git, and gdb.

Teaching Asssistant	**University of Virginia**	**Aug 2018 − May 2019**

- Provided assistance on problem sets during lectures to 150 ordinary differential equation students. Graded exams, quizzes, and daily homework assignments.

Personal Projects (Source Code Available on Github)

- **Grade Manager** Fully featured PyQT5 desktop application for tracking grades across multiple courses. Supports various grading schemes and offers one light and two dark themes.
- **PDF-Packages** TkInter desktop application for bookmarking, combining, and converting PDFs.
- **Paginated Table Extractor** Highly efficient data extractor designed to completely automate the extraction of data from HTML tables that only show a subset of all available data per page.
- **Whoopie Pie Bot** A python bot that emails subscribers whenever the University of Virginia dining menus mention whoopie pies. Deployed on a raspberry pi zero.
- **Dotfiles** My arch linux, i3, polybar, xresources, zsh, st terminal, nvim, and various other configuration files are available to download so that my desktop environment can be easily emulated by others.

Technical Skills

- **Programming Languages**: Python, C++, Java, Rust, R, Kotlin, HTML, CSS, SQL
- **Linux**: Debian, RPM, and Arch based distributions. Shell scripting with bash, zsh, and python.
- **Others**: Git, Docker, Django, QT, Tkinter, Opencv, Numpy, Pandas, Tensorflow, GDB