

Friedrich Doku

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Education University of Pittsburgh.

Pittsburgh, PA

Major Double major in Computer Science & Mathematics

Graduating May 2024 (Expected)

Technical Skills

Programming Languages: Python, C++, C, Go, Rust, Assembly (Arm and x64), NodeJS, R

Software Tools: GDB, Vim, Linux, Bash, TensorFlow, PyTorch, Docker, AWS, Kubernetes, Oracle Cloud

Relevant Coursework: Algorithms and Data Structures, Object Oriented Programming Using Java, System Programming, Computer Organization & Assembly Language

Experience Software Engineer Intern @ Oracle

Austin, TX

Oracle Corporation

Summer 2021-Present

- I'm the lead engineer for a cloud computing project. I am developing a secure data store for IoT applications using the Oracle Cloud.
- Working with Embedded Linux and Oracle Cloud

Research with Professor Adam Lee

Pittsburgh, PA

University of Pittsburgh

Fall 2020-Present

- Developing a secure image processing system for embedded devices.

Developed a Secure Contact Tracing System Named Khopesh

Pittsburgh, PA

University of Pittsburgh

Summer 2020

- I published a research paper on the project titled "Khopesh – Contact Tracing Without Sacrificing Privacy". See for details: https://link.springer.com/chapter/10.1007/978-3-030-63095-9_30
- I implemented the system in C++ and C <https://github.com/MutexUnlocked/khopesh>
- I used Docker, DigitalOcean, and R to test the system and evaluate performance results.
- Khopesh effectively hides the location data and contacts of users from attackers.

Research with Professor Paul Cohen, Dean of Computing

Pittsburgh, PA

University of Pittsburgh

Summer 2020-Fall 2020

- I'm an engineer for a machine learning project, currently spearheading its 1st web service, allowing the research to be disseminated to the broader research community.
- <https://github.com/momacs/sim-server> allows users to easily configure and run probabilistic relational agent-based models. These models can be used to run simulations on Covid-19.
- I implemented the webservice using Python.

Software Engineering Internship w/ Professor Juergen Konczak

Minneapolis, MN

University of Minnesota - Twin Cities

Winter 2019-Present

- Developed a cloud storage application that backs up patient data.
- I designed a robot that improves hand function for patients with somatosensory deficits.

- Added support for a Trusted Execution Environment that guarantees code and data with integrity and confidentiality.
- This work was done in C, C++, Rust, and Python.
- Developed designs for the system's architecture.

Awards	Chancellor's Undergraduate Research Fellowship <i>University of Pittsburgh</i>	Pittsburgh, PA November 2020
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- Received funding to work on my own research project.
- The goal of my project is to remove sensitive information from camera feed.

Leadership Experience	Irondale Computer Science Club <i>President/Founder</i>	New Brighton, MN November 2018-Spring 2020
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- Taught computer science fundamentals to students in Java. For loops, inheritance, derived classes, user input, basic data structures, binary search, linear search, merge sort, etc.
- Organized team projects such as creating a 2D platformer game.