

# Simon Chu

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## EDUCATION

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### **Carnegie Mellon University, Pittsburgh, PA**

May 2020 - Present

Ph.D. in Software Engineering (in progress)

School of Computer Science

### **Wilkes University, Wilkes-Barre, PA**

Aug. 2016 - May 2020

Bachelor of Science in Computer Science

Minor in Mathematics

Overall GPA: 3.94/4.00 (Summa Cum Laude)

## RESEARCH EXPERIENCE

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### **Carnegie Mellon University**

May 2020 - Present

*Ph.D. Student, ABLE Research Group*

*Pittsburgh, PA*

- Exploring ways to apply formal methods in designing self-adaptive systems and cyber-physical systems that are secure, robust and easy-to-use.
- Developed research tools for the drone case study based on the paper by Gafford, et al.
- Formalized Signal Temporal Logic specification language, and implemented the language interpreter.

### **Carnegie Mellon University**

May 2019 - Aug. 2019

*Research Intern, REUSE Program, Wyvern Project*

*Pittsburgh, PA*

- Designed typing rules for safe recursive initialization construct and dynamic composition mechanism.
- Implemented option-type syntactic sugar, enhanced the language expressiveness.
- Maintained Wyvern language documentation, improved code reliability and efficiency by refactoring parser and lexical analyzer rules.
- Presented at the REU student research presentation session at Carnegie Mellon University.

### **Wilkes University**

May 2017 - May 2019

*Undergraduate Researcher*

*Wilkes-Barre, PA*

- Designed the training, testing and evaluating framework for ML models that facilitates the teaching of AI and related courses.
- Developed the scikit-learn models using SVM for classifying animal images with over 80% accuracy.
- Implemented scripts that facilitate distributed model training, evaluation, and statistical analysis.
- Trained and improved face-cropping Haar Cascades, with over 80% face detection accuracy.
- Presented at Eastern College Science Conference (ECSC) 2018 at Ithaca College, Ithaca, New York.

## WORK EXPERIENCE

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### **Wilkes University**

May 2017 - May 2019

*System Manager/Lab Assistant, Math and CS Dept.*

*Wilkes-Barre, PA*

- Maintained Computer Science departmental networks, LDAP server, and lab computers.
- Implemented scripts to automate routine updates, software installation, system accounts, and backups.
- Assisted with large-scale Ubuntu system migration, hardware replacement, and ACM programming contests.

**LSEO, LLC***Software Engineering Intern*

Jan. 2018 – May 2018

*Wilkes-Barre, PA*

- Assisted the content marketing team with the development of 5+ clients' web-based projects.
- Analyzed website statistics, generated and visualized data using Google Analytics, SEMrush, and Tableau.
- Monitored web traffic, detected malicious network requests and vulnerabilities on clients' projects.

**Wilkes University***Resident Assistant/Student Mentor, Office of Residence Life*

Aug. 2017 – May 2020

*Wilkes-Barre, PA*

- Served as a leader for over 40 residents by planning 20 community and career development events.
- Responsible for the safety and residential needs of 340 residents throughout the academic year.
- Participated and facilitated staff meetings, hall programs, and campus events.
- Served as a campus security authority, responsible for crisis management on campus.

**SKILLS**

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**Programming Languages****Tools****Languages**Python, Java, C/C++, HTML/CSS/JS, Swift, OCaml, LISP, L<sup>A</sup>T<sub>E</sub>X

Matplotlib, scikit-learn, TensorFlow, Lex, Yacc, JavaCC

English, Mandarin, Elementary-Spanish, Elementary-French