

# Sean Mackay

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## **Education**

**BACHELOR OF SCIENCE | CURRENT | UNIVERSITY AT BUFFALO | GPA: 3.675 | EXPECTED GRADUATION: MAY 2020**

- Major: Computer Science
- Related coursework: Data Structures, Algorithms Design and Analysis, Programming Language Design, Theory of Computability, Operating Systems, Software Engineering, Software Project Management

## **Job Experience**

### **CSE 113 CS FOR NON-MAJORS UTA | SPRING 2018**

- Teaching assistant for Dr. Jennifer Winikus
- Course focused on introductory concepts, was taught in Processing

### **CSE 115 INTRO TO CS 1 UTA | FALL 2018-PRESENT**

- Teaching assistant for Dr. Carl Alphonse, Dr. Jesse Hartloff, Dr. Matthew Hertz, and Dr. Jennifer Winikus
- Course focused on teaching first semester CS majors introductory concepts including coding in Python and Javascript.

### **CSE 250 DATA STRUCTURES UTA | FALL 2018-SPRING 2019**

- Teaching assistant for Dr. Andrew Hughes
- Course focused on data structures, runtime proofs, and graph theory

### **CSE 331 ALGORITHMS UTA | FALL 2019-PRESENT**

- Teaching assistant for Dr. Atri Rudra
- Course focused on algorithms design, analysis, proofs, and runtime analysis

### **CSE 305 PROGRAMMING LANGUAGES UTA | SPRING 2020-PRESENT**

- Teaching assistant for Dr. Lucasz Zariak
- Course focused on programming languages design, semantics, and parse trees.

### **CSE 442 SOFTWARE ENGINEERING UTA | FALL 2019-PRESENT**

- Teaching assistant for Dr. Matthew Hertz
- Course focused on principles of software design such as agile development, scrum, version control.

### **FREELANCE ANDROID APP DEVELOPER | WINTER 2018-PRESENT**

- Have developed in React Native, Dart, and Java for android applications

- Worked for James Clay, owner of Mostly Software Design LLC.

### **RESEARCH ASSISTANT, COMPUTER SCIENCE| UNIVERSITY AT BUFFALO | SUMMER 2018-SPRING 2019**

- Did research with Dr. Sridhar as well as James Clay
- Focused on using machine learning to improve performance of CPU prefetchers

### **RESEARCH ASSISTANT, ENGINEERING EDUCATION| UNIVERSITY AT BUFFALO | SPRING 2019-PRESENT**

- Did research with Dr. Adrienne Decker
- Formulated research on understanding the effects of pre-college computing activities on students' decision to study computer science.
- Also worked on a data science project involving analyzing research paper keywords.

## **Personal Projects**

### **LATERAL| PROGRAMMING LANGUAGE AND INTERPRETER| SPRING 2019-PRESENT**

- Ongoing project designing a custom programming language built around an OCaml compiler.
- Utilized concepts learned during CSE 305 programming languages
- <https://github.com/snmackay/Lateral>

### **PHOTOMANAGER| PYTHON APPLICATION| SUMMER 2019-PRESENT**

- Ongoing project writing a python application to manage, organize, and rename my photo collection based on metadata and phone-generated name.
- Involves mass file renaming, string parsing.
- <https://github.com/snmackay/photoManager>

### **KEYWORDGEN| PYTHON PDF SCRAPER| SUMMER 2019-PRESENT**

- Python application to scrape pdfs, specifically academic papers, and find the keywords listed by the author as well as find the top 30 most frequently occurring keywords within the pdf.
- Involves pdf parsing, mass data processing and storage
- <https://github.com/snmackay/KeywordGen>