Michael Chun

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Education

University of Maryland, College Park — College Park, MD
Bachelor of Science in Computer Science, Minor in Business — *Expected May 2025*

Relevant Coursework: Computer Systems, Data Structures and Algorithms, Object Oriented Programming, Discrete Math, Linear Algebra

Experience

Software Engineer Research Intern — May 2023 – August 2023
University of Maryland — *College Park, MD*

- Developed tools using **Python**, **JavaScript**, **CSS**, and **HTML** focusing on SVG element manipulation
- Worked on a **JavaScript** tool to analyze **100+** chart files to summarize key patterns and trends
- Built a custom HTTP back-end server with **Python**, capable of serving files, handling GET requests, and processing POST requests for storing JSON data
- Created functionality allowing users to save SVG annotations to their home directory and provided a reload feature

Geophysical Student Researcher — Sep. 2021 – July 2022
Environmental Visualizations Research Stream — *Binghamton, NY*

- Led a team that enhanced harmful algal bloom detection efficiency by **25%** using **MagMap2000** and **ThermoMeter** for drone-based hyper spectral imaging, outperforming traditional satellite methods
- Organized logistics for 3 research expeditions to Lake Erie, identifying optimal study locations

Data Analytics Research Intern — May 2020 – Dec. 2020
SoMAS, Stony Brook University — *Stony Brook, NY*

- Spearheaded initiative of prediction models for Hurricane Sally's precipitation changes from climate change using **Python**, resulting in **100+** detailed 2D visualizations that compared IMERG and CAM5 data
- Designed data extraction and plotting by utilizing **PyNIO** and **PyNGL** to handle multidimensional array modules from **NASA EarthData**
- Produced spatial and temporal mapping of climate data by leveraging **Xarray** and **NumPy**, which revealed a **61.5%** increase in precipitation due to climate change

Projects

MiniCaml | *OCaml*

- Created a dynamically typed version of OCaml, MiniCaml, by implementing an interpreter
- Tokenized input strings by engineering lexer, parser, and evaluator functions to produce abstract syntax trees
- Developed a version of utop to enhance interactive shell capabilities for MiniCaml by extending parsing functions to top-level directives

Analytic Tracking App | *JavaScript (Vue.js, Express.js, Node.js), HTML/CSS*

- Developed a web application for tracking player statistics across different gaming platforms by extracting data from an external API
- Implemented a Vue Router using **Vue.js** to create a dynamic web application that updates the interface based on user interaction and send notifications using Vue-toasted
- Utilized **Express.js** to optimize back-end routing and middle ware, improving server response times by **18%**

Technical Skills

Languages: Java, Python, JavaScript, Typescript, C, MIPS Assembly, OCaml, HTML/CSS, MATLAB
Frameworks: React, Node.js, Vue.js, Express.js
Developer Tools: Git, VS Code, Eclipse, PyCharm, IntelliJ, Emacs, Vim
Libraries: Xarray, NumPy, pathlib