Alexander Wollam

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Education

The Ohio State University, Columbus, OH
Bachelor of Science in Computer Science & Engineering
Minor in Mathematics
Graduation Date: May 2021
Overall GPA (4.00 scale): 3.490; Department GPA: 3.767

Washington University in St. Louis, St. Louis, MO
Master of Science in Computer Science
Graduation Date: August 2023
Overall GPA (4.00 scale): 3.78
PhD in Computer Science
Expected Graduation: May 2028

Qualifications and Skills

Computer Science Specific Skills: JS/Node, C++, C#, Java, Ruby, Python, SQL, Git, PyTorch, TensorFlow

Completed General CS Course Topics: OO Software-Dev, Advanced Algorithms, Computer Architecture & Systems, Database Systems & Cloud-based Data Management, Web Applications, Automata & Formal Languages, Programming Language Principles, Software Requirement Analysis, Human-in-the-Loop Computation

Completed AI Course Topics: Machine Learning, Datamining, AI General topics, Neural Nets, Speech and Language Processing, Adversarial AI, Computer Vision

Professional Experience

Bioinformatics Research Assistant (Programming Intern) May – August; 2021, 2022

Research Technician 1 (Programming Intern) May – August; 2019

Lab Assistant (Programming Intern) June – August; 2017, 2018

Griffith Lab, McDonnell Genome Institute at Washington University, St. Louis, MO

- Developed code in Ruby and Python for the applications DGIdb and pVACtools
- Regularly Communicated with team members on issues and developments through GitHub, Slack communications, and weekly meetings
- Enhanced existing applications features and fixed bugs in conjunction with other team members towards the goals of the projects
- Worked on both back-end features relating to a Python Flask API and Postgres database, with front-end visualization tool prototyping, and on enhancing optional tool extensions
- Coauthored two publications, one for each application, contributing primarily through the development of the project software

Research Experience

Graduate Organized Research (2022 – Present)
MVRL, Washington University, St. Louis, MO

- Contributed to a funded computer vision project under Prof. Nathan Jacobs of the Multimodal Vision Research Laboratory (MVRL)
- Acted as a researcher focused on designing vision models to accomplish desired tasks

Masters Research Project (2022 – 2023)
Washington University, St. Louis, MO

- Completed and defended a Masters Research project titled "Exploring Sequential Outdoor Panorama Synthesis with Diffusion Models"
- Explored different architectures and techniques that leverage diffusion models to generate image sequences
- Developed derived modules optimized for panorama views
- Collected a small panorama dataset designed for sequential view synthesis

Students and Teachers As Research Scientists (STARS) (Summer 2016)
University of Missouri: St. Louis; Donald Danforth Plant Science Center, St. Louis, MO

- Completed an individual research project titled "Assessment of morphological evolution in grasses through database mining"
- Wrote up a research paper over the project and its results
- Presented on the project findings to other students and advisors in the program
- Optimized a procedure that allows for efficient analysis of morphological data provided a desired data set
- Used Python to process existing data files based on provided parameters to a more useful dataset for analysis

Washington University Pre-Engineering Summer Institute (Summer 2015)
Washington University, St. Louis, MO

- Explored various fields of engineering and concepts such as innovation, entrepreneurship, and biomedical ethics through lectures, speakers, and activities
- Participated in labs involving electrical, computer, biomedical and systems engineering
- Proposed and presented on an individual project and a group project

Publications

- Cotto, K. C., Wagner, A. H., Feng, Y.-Y, Kiwala, S., Coffman, A. C., Spies, G, **Wollam, A.**, Spies, N. C., Griffith, O. L., & Griffith, M. (2018). DGIdb 3.0: a redesign and expansion of the drug–gene interaction database. *Nucleic Acids Research*, 46(D1), D1068–D1073
- Hundal, J., Kiwala, S., McMichael, J., Miller, C. A., Xia, H., **Wollam, A. T.**, Liu, C. J., Zhao, S., Feng, Y. -Y., Graubert, A. P., Wollam, A. Z., Neichin, J., Neveau, M., Walker, J., Gillanders, W. E., Mardis, E. R., Griffith, O. L., & Griffith, M. (2020). pVACtools: A Computational Toolkit to Identify and Visualize Cancer Neoantigens. *Cancer Immunology Research*, 8(3), 409.