Aidan Lakshman

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EDUCATION

University of Pittsburgh, School of Medicine — 2020 – 2025 (expected)
Doctoral Candidate, Biomedical Informatics

- Advisor: Dr. Erik Wright
- Dissertation Topic: Using coevolutionary signal to predict function of uncharacterized proteins
- Funded by National Library of Medicine T-15 Training Grant

University of Central Florida — 2016 – 2020
Bachelor of Science, Mathematics, magna cum laude

- Burnett Honors College
- National Merit Scholar

Nagasaki University of Foreign Studies — Summer 2019
USAC Study Abroad, Japanese Language and Culture

CONFERENCE PRESENTATIONS

Bioconductor 2022 — July 27-29, 2022, Seattle, WA
Using comparative genomics to predict protein coevolution networks

- Led a two hour workshop
- Awarded merit-based travel funding
- Presentation materials available at ahl27.com/tutorials

NSF Sponsored Workshop — July 25-26, 2022, St. Augustine, FL
Detecting adaptive evolutionary events in genomes of polar species

- Awarded merit-based travel funding

Evolution 2022 — June 24-28, 2022, Cleveland, OH
Protein Functional Inference using Coevolutionary Signal

NLM Informatics Training Conference 2022 — June 22-24, 2022, Buffalo, NY
Ensemble Methods Improve de novo *Prediction of Protein Functional Association Networks*

TEACHING & ADVISING

Undergraduate Mentor — Fall 2022
Advisor

- Mentored undergraduate students for a semester-long research internship program
- Designed an individualized curriculum to teach R programming for Bioinformatics

UPMC DDCF-UI Program — Summer 2022
Advisor

- Mentored undergraduate students for a summer-long research internship program
- Designed summer research projects for mentees
- Gave lectures to intern cohort

R Programming for Scientific Research, Univ. Pittsburgh — Fall 2021
Teaching Assistant

- Helped teach a graduate level course in R programming
- Gave lectures, graded assignments, and wrote quizzes

Artificial Intelligence Club, Univ. Central Florida — 2018 – 2020
Director

- Gave regular lectures on machine learning to classes of >30 undergraduates
- Led several journal clubs for undergraduate students
- Coordinated sponsorship opportunities and guest speakers

OTHER FUNDED RESEARCH

Robotics Institute Summer Scholar, Carnegie Mellon University — Summer 2018
Intelligent Coordination and Logistics Lab

- Funding Agency: National Science Foundation
- Principal Investigators: Dr. Stephen Smith and Dr. Isaac Isukapati

- Contributed Work: used Bayesian hierarchical modelling to predict bus dwell times for traffic signal control optimization, and used cellular and DSRC GPS readings to improve positioning in an intersection for use in an app for mobility impaired pedestrians.
- Total Award: $5,250

Burnett Research Scholars Grant 2018 – 2019

- Funding Agency: UCF Burnett Honors College
- Principal Investigators: Aidan Lakshman, Dr. Annie Wu (Advisor)
- Project Title: Improving efficiency of embodied evolutionary robotic systems within the context of multi-foraging problems by incentivizing exploration behavior.
- Total Award: $3,000

WORK EXPERIENCE

Amazon Web Services, Herndon, VA [Virtual] Summer 2020 & 2021

Software Development Engineer Intern

- Led a team to implement a robust testing framework for Service Workbench on AWS, an open source AWS product to help researchers easily provision cloud resources.
- Redesigned how AWS accounts are handled by implementing new UI components, writing API calls, and implementing backend server request handling
- Designed UI components using React, backend components with Node.js, and additional processes with AWS Lambda

Software Engineering Institute, CERT Division, Carnegie Mellon University Summer 2017

Data Science / Software Engineering Intern

- Developed a Python application utilizing Apache Spark to use Latent Dirichlet Allocation to identify trends in malware data.
- Developed a Python program to simulate web traffic and user activity for cyberdefense training environments.

SKILLS

High Performance Computing

- Experience implementing genomics algorithms on distributed systems
- Over 1.5 million compute hours on HPC systems
- Passed AWS Cloud Practitioner Certification Exam

R Programming

- High level of proficiency, particularly in comparative phylogenomics
- Published code in the SynExtend R package

C Programming

- Extensive experience writing C extensions for R
- Moderate experince writing C programs for other applications

Other Programming Languages

- Development experience with JavaScript, Python, Bash, and PowerShell
- Proficiency with C#, Java, and Haskell

Foreign Languages

- Conversational proficiency in Japanese and German

Computer Engineering

- Designed and built a cloud storage system with multiple layers of data redundancy
- Built a four-node supercomputer using Kubernetes on Raspberry Pis
- Built a computer from scratch on a breadboard with a 6502 microprocessor
- Wrote a 6502 emulator in C
- Wrote a FORTH interpreter from scratch in Assembly for the 6502
