Ashley Scruse, Ph.D.

Postdoctoral Researcher, Department of Computer Science
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Research Areas

Bioinformatics, Machine Learning, Computational Biology, Combinatorial Probability

Education

Ph.D., Bioinformatics (2024), University of Georgia
Thesis: *Counting Subnetworks in Genetic Regulatory Networks from Gene Duplication*
B.S., Mathematics (2017), Clark Atlanta University, Cum Laude

Professional Experience

- **Postdoctoral Researcher, Morehouse College** (2024–present)
- **Faculty Fellow, AUC Data Science Initiative** (2024–present)
- **Research Fellow, University of Georgia** (2017–2024)

Publications

- Scruse, A., Arnold, J., & Robinson, R. Counting subnetworks under gene duplication in genetic regulatory networks. *Bulletin of Mathematical Biology* (2025, accepted).
- Scruse, A., Arnold, J., & Robinson, R. Counting subnetworks under gene duplication in genetic regulatory networks. *arXiv*, `https://doi.org/10.48550/arXiv.2405.03148`
- Al-Omari, A.M., Griffith, J., Scruse, A., Robinson, R., Schuttler, H.-B., & Arnold, J. Ensemble Methods for Identifying RNA Operons and Regulons in the Clock Network of Neurospora Crassa. *IEEE Access*, vol. 10, 2022, pp. 32510–32524.

Presentations

- Scruse, A. "From Access to Impact: Growing AI Capacity at Morehouse College, Bridging the Diversity and Skills Gap in AI Through Culturally Relevant Curriculum." ADMI 2025 Conference (2025)

Grants and Fellowships

- NIH T32 Genetics Training Grant, University of Georgia
- University of Georgia Quantitative Bioinformatics Training Grant

Research Experience

- **Python Bootcamp Participant**, University of California, Berkeley (Summer 2018)
- **Fungal Genomics and Computational Biology REU**, University of Georgia (Summer 2016)
- **Mathematical Sciences Research Institute REU**, University of California, Berkeley (Summer 2015)

Curriculum Development

- **Summer Bridge Experience (SBX)**, Morehouse College (Summer 2025)
- **Machine Learning Postbaccalaureate Program**, Morehouse College (Summer 2025)
- **Introduction to Machine Learning**, AUC Data Science Initiative (2024–2025)
- **Python for Data Science**, AUC Data Science Initiative (2024–2025)
- **Natural Language Processing for Data Science**, AUC Data Science Initiative (2024–2025)
- **Data Visualizations and Communications using Python**, AUC Data Science Initiative (2024–2025)

Teaching and Mentoring

- **Program Lead, Summer Bridge Experience (SBX)**, Morehouse College (Summer 2025)
  Led 6-week pre-freshman program for computing science majors: 3-week Python bootcamp, 3-week capstone projects; led team of 3 instructors and 1 TA; introduced students to HPC (TACC); mentored

20 students on 20 research projects

- **Program Lead, Machine Learning Postbaccalaureate Program**, Morehouse College (Summer 2025)
  Led 12-week program: 3-week Python bootcamp, 6-week ML fundamentals using HPC/supercomputing (TACC), 3-week capstone projects; led team of 3 instructors and 1 TA; mentored 15 students on 13 research projects
- **Workshop Organizer, InSPIRE Workshop**, Morehouse College (Summer 2025)
  Created agenda, recruited presenters, managed workshop on Whova, coordinated site visits and hotel logistics; brought 31 students (15 ML, 16 SBX) to present at workshop
- **Workshop Instructor, Python for Beginners**, AUC Data Science Initiative (March 2025)
  Taught 40+ attendees including HBCU Data Science Influencers' Cohort; covered Python fundamentals, pandas, and matplotlib using real-world dataset focused on Black-owned businesses
- **Collaborator, Faculty Development Summer Institute**, AUC Data Science Initiative (May 2025)
  Helped plan week-long institute (May 26–30, 2025) to build HBCU data science capacity; led Python programming workshops; facilitated faculty course development for data science integration; provided ongoing mentorship and Python workshops as needed (July 2025)
- **Collaborator, Faculty Development Winter Institute**, AUC Data Science Initiative (December 2025)
  Helped plan institute (December 15–18, 2025); led programming workshop; assisted faculty in incorporating data science into their curricula
- **REU Recruiter and Mentor**, Fungal Genomics and Computational Biology, UGA (2018–2022)
- **STEM Program Coordinator**, Clark Atlanta University (Summer 2017)
- **Mathematics Tutor**, Clark Atlanta University Math Lab (2013–2017)

Student Research Mentees (Summer 2025)

Summer Bridge Experience (SBX), Morehouse College

- Londun Ferrer – Understanding What Influences College Placement
- Michael Osei Owusu – Digital Habits and Mental Health: Exploring Screen Time, TikTok Use, and Sleep Quality
- Patrick Zablon – The Impact of Automation Risk on Projected Job Openings in Predicting Job Stability Across Industries (2024–2030)
- Oluwaferanmi Oyelude – Exploring the Relationship Between Age and Cardiovascular Disease: A Data-Driven Approach
- Aboubakary Traore – Screen Time Effect on Mental Health: How Does Excessive Screen Time Affect Us as Humans?
- Oluwatobiloba Adejumo – Emergency Response Efficiency and Its Association with Crash Severity and Economic Burden: A Cross-Country Study Using Traffic Data
- Daniel Baadom – Automation Risk Across Economically Divergent Nations: A Comparison of Remote Jobs in the U.S. and India
- Olumide Okebiorun – Which Matters Most: Analyzing How Different Factors Impact Job Security and Automation Risk
- Brandyn Daley – Effect of Experience Required on Automation Risk Among Different Industries
- Ombeni Shendera – EDA of IMDb Movie Reviews
- Nathan Bryant – The Influence of Age on the Effects of Cardiac Arrest
- Trinity Washington – The Projected Impact of AI on Industry Employment Risk (2024–2030)
- Somkenechukwu Onwusika – Examining the Correlation of Student Academic Performance and Student Soft Skills to Placement Outcomes
- Dallas Cook – AI Usage in Students Life
- De'Andre Randolph – Factors of Student Placement: Do Non-Academic Stats Impact Placement Status More Than Academic Stats?

- Iamen Ibrahim – Influences of Property Attributes on Residential Sale Prices in Ames, Iowa
- Ulonnam Ugochukwu Martins – Exploratory Data Analysis on the Impact of AI Automation on Job Industries (2024–2030)
- Daniel Asante – Impact of AI Automation on Remote Works: Analyzing Job Automation Risk and Remote Work Ratios (2024–2030)
- Prevailer Nchekwube – App Usage Behavior: The Impact of Smartphone Model and Gender
- Daniel Nmecha – Bridging the Gap Between AI and Cardiac Arrest Response in Hospitals

Machine Learning Postbaccalaureate Program, Morehouse College

- Scotteria Scott – Using Machine Learning Model for Early Crop Disease Detection
- Selam Tekle – Machine Learning for Early Diabetes Detection and Awareness
- Sarah Chung – Faux Real: An AI Detection Tool
- Gabriel Howell – Solar Flare Prediction: Classifying Solar Flares
- Courtney Baker – Smart VAR: Machine Learning for Faster and More Accurate Soccer Reviews
- Matthew Adjin-Tettey & Chintan Brahmbhatt – Predictive Modeling of Calidris canutus rufa Movement Using Machine Learning
- Luke Osuagwu & Tyler Thomas – Professor AI: Our Children, Our Future
- Naseefah Chowdhury – RiskRadar: Data-Driven Diabetes Detection
- Fatma Hagi – A Machine Learning Approach to Hypertension Risk Prediction
- Anoushka Ali – AI Fake Reviews Detector
- Ednan King – Will UberEats Last or Will It Go?
- Nhat Phan – BMW Sales Classification Using Machine Learning
- Jada Dawkins – Customer Service Email Organizer

Technical Skills

Python (NumPy, Pandas, SciPy, TensorFlow, PyTorch, scikit-learn), LaTeX, Machine Learning, High-Performance Computing