

Abdurahman Ali Mohammed

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SKILLS AND TECHNICAL PROEFFICIENCY

- **Programming:** Python, Java
- **Machine Learning:** PyTorch, Scikit-learn, OpenCV
- **Data Analysis & Visualization:** Pandas, Matplotlib, Seaborn
- **Cloud Computing:** Amazon Web Services (AWS), Google Cloud
- **Databases & OS:** MySQL, Linux, Windows, MacOS
- **Tools:** Git, ONNX
- **Soft Skills:**
 - Research & Analysis
 - Effective Communication
 - Leadership
 - Continuous Learning
 - Teamwork

EDUCATION

Iowa State University August 2021 – May 2026 (Expected)
Doctor of Philosophy - PhD, Computer Science Ames, Iowa

Iowa State University August 2021 – May 2024
Master's degree - MSc, Computer Science Ames, Iowa

- Thesis title "Towards Interpretable Density Map-based Cell Counting Models".

Addis Ababa Science and Technology University September 2014- June 2018
Bachelor's degree, Computer Software Engineering Addis Ababa, Ethiopia

- Cumulative GPA: 3.98

PROFESSIONAL EXPERIENCE

Data Science and AI summer associate – JPMorgan Chase June 2025 – August 2025

- Analyzed transactional data to improve fraud detection model performance.
- Investigated the correlation of features obtained from different sources.
- Implemented algorithms to automatically generate features useful for fraud detection.

Graduate Teaching and Research Assistant - Iowa State University August 2021 –Present

- Built Deep Learning models that reduced cell-counting time to 0.2 seconds per image, enhancing efficiency for biologists
- Utilized AWS EC2 and Google Cloud virtual instances to train and deploy machine learning models
- Conducted data analysis and visualization using Python, Pandas, and Matplotlib for research projects
- Led a team of 7+ Teaching Assistants for an Object-Oriented Programming course with 400+ students per semester
- Developed and implemented auto-grading scripts, reducing grading time by 50%
- Mentored six undergraduate students in research methodologies, fostering academic growth and innovation
- Provided one-on-one support to students, improving their understanding of complex programming and data analysis concepts

Data Science Lab Instructor – **Ames National Laboratory** Summer 2023, Summer 2024

- Instructed 25+ students over two summer sessions in advanced data science tools including Pandas, Scikit-learn, and Seaborn.
- Created and refined 6+ hands-on projects using real-world datasets.
- Achieved a 95% project completion rate through effective instruction and guidance.

Software Engineer - **Modern Cyber Intel Consultancy PLC** October 2018 – July 2021

- Conducted weekly analysis of customer databases, generating 5-10 actionable reports for senior management, driving data-informed decision making.
- Leveraged customer data analysis to optimize a targeted SMS advertisement system, delivering 25,000+ personalized marketing messages daily.
- Designed and developed 5+ client websites, incorporating responsive design and custom functionality to meet business needs.

PUBLICATIONS

- **Mohammed, A.A.**, Tavanapong, W., Fonder, C. and Sakaguchi, D., 2025. CountXplain: Interpretable Cell Counting with Prototype-Based Density Map Estimation. In Medical Imaging with Deep Learning.
- **Abdurahman Ali Mohammed**, Catherine Fonder, Donald S. Sakaguchi, Wallapak Tavanapong, Surya K. Mallapragada, and Azeez Idris. 2023. IDCIA: Immunocytochemistry Dataset for Cellular Image Analysis. In Proceedings of the 14th ACM Multimedia Systems Conference (MMSys '23).
- A. Idris, **A. A. Mohammed**, and S. Fanijo, "Stronger is not better: Better Augmentations in Contrastive Learning for Medical Image Segmentation," NeurIPS Black in AI workshop, Nov-2022. [Poster]

HONORS & AWARDS

Teaching Excellence Award - **Iowa State University** September 2023

- Honored as one of the top 10% of graduate students at ISU for outstanding teaching.

Google Computer Science Research Mentee September 2022

- Selected as one of 300 mentees from a highly competitive pool of applicants across North America.

Gold Medal – **Addis Ababa Science and Technology University** June 2018

- Gold medal for demonstrating an academic performance.

LEADERSHIP

Turkish Student Association – Iowa State University August 2024

Computer Science Graduate Student Organization - **Iowa State University** September 2022

