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
SmartMasa (Precision agriculture startup) - **Addis Ababa**   January 2019