

# Mohamed Abdelnaby

[mohamedabdelnaby@ou.edu](mailto:mohamedabdelnaby@ou.edu) | [www.mohamedabdelnaby.com](http://www.mohamedabdelnaby.com) | [github.com/MohamedHAbdelnaby/](https://github.com/MohamedHAbdelnaby/)

## EDUCATION

---

### University of Oklahoma

*Accelerated Master of Science in Computer Science (B.S./M.S. program)*

Norman, OK

May 2023 – December 2024

### University of Oklahoma

*Bachelor of Science in Computer Engineering, Minor in Mathematics, GPA: 3.75/4.0*

Norman, OK

August 2020 – May 2024

## TECHNICAL SKILLS

---

**Languages:** Java, Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, R

**Frameworks:** React, Node.js, Flask, JUnit, FastAPI

**Developer Tools:** Git, Docker, GCP, AWS, VS Code, Visual Studio, PyCharm, Eclipse, Jupyter Notebook

**Libraries:** pandas, NumPy, Matplotlib, TensorFlow, PyTorch, BeautifulSoup, scikit-learn, OpenCV, MLPack

## EXPERIENCE

---

### Undergraduate Research Assistant

*Data Institute for Societal Challenges*

September 2022 – Present

Norman, OK

- Orchestrated a big data project, building, scraping, and cleaning databases comprising over 1 million Latin inscriptions, vital for an in-depth research study on Urban Scaling.
- Conducted clustering analysis (K-Means, DBSCAN, Hierarchical, Gaussian Mixture Models), regression analysis, and urban scaling modeling on 1000+ ancient cities to uncover insights in the Latin inscription datasets.
- Deployed machine learning algorithms and statistical models to identify relationships between variables. Implemented impactful visualizations using Plotly, Seaborn, and Matplotlib.

## LEADERSHIP EXPERIENCE

---

### Software Developer

*Hacklahoma*

May 2023 – Present

Norman, OK

- Managed full-cycle development of Hacklahoma website using React.js to create an interactive and user-friendly interface for 800+ users seeking organization and event information.
- Engineered an online registration system to optimize data collection for 400+ students, streamline the sign-up process, and boost participant registration and engagement.

### Project Manager

*OU Artificial Intelligence Organization*

May 2022 – May 2023

Norman, OK

- Led technical projects (workshops and tutorials) for the AI Organization at OU, with 100+ members.
- Organized OU AI Symposium to facilitate learning, innovation, and collaboration among students, with 100+ participants.

### Associate

*OU Jerry Holmes Engineering Leadership Program (JHLP)*

May 2022 – May 2023

Norman, OK

- Facilitated leadership activities and initiatives in Gallogly College of Engineering.
- Managed Alumni & Mentor outreach operations, managing events for over 70 members.

## PROJECTS

---

### Adversarial ML | *TensorFlow, PyTorch*

January 2022 – Present

- Spearheaded the innovative application of adversarial ML algorithms, earning two Research Fellowships for significant advancements in the field.
- Developed robust models, clarified algorithmic strengths and weaknesses, and conducted experiments to test resilience against adversarial attacks.

### itsupport.ai | *Python, FastAPI, React, AWS, LLama-index, BeautifulSoup, Requests*

April 2023

- Created an AI-powered chatbot to provide accurate and context-specific IT support.
- Established a robust backend infrastructure on AWS EC2 instances with FastAPI and uvicorn.
- Implemented a responsive UI with conditional rendering using React.js and Tailwind CSS.
- Built web scraper, collected 380+ IT support articles, improved chatbot with context-based search using llama-index.

**APT Detection via Deep Learning** | *Python, TensorFlow, Scikit-learn, Keras* Aug 2021 – December 2021

- Researched 10 deep learning algorithms for APT detection, bolstering system security.
- Implemented top-performing algorithms, improving simulated APT detection.

**ML Algorithms in IDS Systems** | *Python, TensorFlow, Scikit-learn* January 2021 – May 2021

- Executed the deployment of a Network Intrusion Detection System using Machine Learning algorithms such as Bayesian Networks, Random Forest, and J48, enhancing system's detection accuracy.
- Established a malware testing protocol on a Windows Server Virtual Machine, analyzing 10,000+ system and network logs, which boosted attack categorization precision.

**RSA Cryptography: An Exploratory Project** | *Python, Mathematical Analysis* January 2019 – May 2019

- Led comprehensive research on RSA cryptography, resulting in a detailed report on its current applications and future potential.
- Utilized advanced mathematical concepts and algorithms to understand and analyze RSA encryption.

## AWARDS AND HONORS

---

- Provost's Undergraduate Research and Creative Activity Fellowship, Engineering Research Fellowship, William H Barkow Outstanding Computer Engineering Student Scholarship, Cleo Cross Outstanding International Student Scholarship, Sower Award (Top 10% class rank), Honors Engineering Research Program (Selected twice), First-Year Research Experience Program, President's Honors Roll, Dean's Honors Roll, Gallogly College of Engineering Scholarship, Jerry Holmes Leadership Program Scholarship, Ernest W. Reynolds Endowed Scholarship.