



# Clayton Curry

Software Engineer, Database Engineer,  
Research Engineer, Research Scientist

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## EDUCATION

University of Oklahoma  
**B.S., COMPUTER SCIENCE**

minor: Mathematics

Dept GPA: 3.28

Minor GPA: 3.50

Expected Graduation: Dec 2023

## TECHNICAL SKILLS

### General-Purpose Programming Languages

Proficient:

Python, Bash, Regex, Java, C/C++, Web Related

Familiar:

SQL, Visual Basic for Applications, R, MATLAB

### Software Engineering Tools

Proficient:

Git, Conda, ReactJS, VSCode, Eclipse, Vim

Familiar:

Slurm, Jira, Amazon Web Services, Google Cloud Platform, Chrome Developer Tools

### Machine Learning / Numerical Libraries

Proficient:

Tensorflow w/ Keras, PyTorch, Pytorch Lightning, Numpy, Pandas

Familiar:

Scikit-Learn, Tensorboard, Plotly, Matplotlib, Optuna

Theory:

Bayesianism, Neuroevolution, Time-Series Estimation, Computer Vision, Natural Language Processing, Graph Representation Learning, Equivariant Deep Learning

## SUMMARY

- Experienced (faculty-supervised) research assistant in multi-sensor, multi-object tracking, with emphasis on interpretable machine learning for data-driven decision support systems
- Demonstrated history of taking ownership of work, developing software to continuously improve processes in business/research/development, and working extended hours when needed to meet expected deadlines
- Lifelong teammate who enjoys opportunities to grow teams and engineer solutions to highly open-ended problems that push me to learn new skills and new mathematics

## EXPERIENCE

### RESEARCH ASSISTANT, MULTIPLE OBJECT TRACKING SOFTWARE

University of Oklahoma | School of Computer Science

Nov 2022 - Present

- This research investigated novel applications of machine learning in airspace monitoring software, with emphasis on the recognition of basic flight maneuvers and long-term forecasting of trajectories
- Implemented data scraping software in Python to gather real-time positional data from flight transponders; recorded > 10,000,000 waypoints in continental US over one March weekend
- Authored 5 tutorials in Google Colab on mathematical algorithms for object tracking, trajectory recognition, and time-series forecasting; topics include Linear Kalman Filter, Extended Kalman Filter, Multiple Hypothesis Tracking algorithm, Convolutional Neural Network, and Transformer Network
- Identified and dissected literature (on a daily basis) published on the Arxiv and in major conference/journals; adapted numerous advanced learning algorithms using Tensorflow and Pytorch
- Strategized with OU IT to provide DevOps tailored for efficient model debugging and experimentation

### LINUX SYSTEM ADMINISTRATOR ASSISTANT

University of Oklahoma | Department of Physics

Feb 2021 - Sep 2022

- Scripted building-wide inventory-taking procedures and network-wide software updates using Bash SSH, reducing days of labor into a few seconds
- Developed a recursive website crawler in Python for automating quality-control procedures (checking for broken links, accessibility requirements), saving countless hours of error-prone labor

### PRESIDENT/CHAIR

University of Oklahoma | Student Chapter for the Association of Computing Machinery

Aug 2020 - Sep 2022

- Elected as treasurer, then president, for OU's student chapter of the professional society, ACM
- Presented a live introductory-level workshop to an audience of 15 computer science, physics, and math students; hand-crafted topics included command line interface, unix operating systems, version control using GitHub; all positive feedback
- Hosted weekly peer discussions and occasional prof. dev. workshops

### BASKETBALL REFEREE / LEAD OFFICIAL

Oklahoma | Oklahoma Secondary Sports Association

Nov 2015 - Present

- Officiated over 1,000 basketball games from elementary to high school OSSAA varsity
- Methodically enforced rules, often under strict pressure from fans, players, and coaches

## AWARDS

### OKLAHOMA ACADEMIC SCHOLAR

University of Oklahoma | OK State Regents' for Higher Education

- Earned full-ride scholarship to the University of Oklahoma by scoring 34 / 36 (cumulative) on the ACT
- English-34, Mathematics-36, Reading-32, Science-35

## OTHER EXPERIENCE

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### TREASURER

Student Chapter for the Association for Women in Computing | University of Oklahoma  
Mar 2021 - Apr 2022

- Jointly sponsored 4 student events, facilitated inter-club networking, oversaw payments to vendors

### RETAIL, SMALL-BUSINESS NUMBER CRUNCHER

Kief Leaf CBD | Bethany, OK

Jun 2019 - Jan 2020

- Developed and instituted a Microsoft Excel add-in for automating weekly inventory-taking procedures and auto-generating monthly compliance reports
- Add-in developed in Excel Developer tab, written in Visual Basic for Applications

### HEAD LIFEGUARD

Reno Swim and Slide | Midwest City, OK

May 2016 - Aug 2018

- Advocated for up to 75 lifeguards, coordinating work schedules, stand rotations, and weather-related accommodations
- Greeted, assisted, and triaged the needs for (up to) 350 daily facility guests