David Khachatryan

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EDUCATION

Northwestern University — *Evanston, IL*   Masters of Science in Robotics   December 2025
University of Wisconsin-Madison — *Madison, WI*   Bachelor of Arts in Computer Science   December 2022

SKILLS

Software: Git, Linux, C++, Python, C, Assembly, Bash, SQL, Java, Smali, Javascript, Go, Test-Driven Development
Robotics: ROS2, Gazebo, SolidWorks, RViz, OpenCV, MoveIt, Microcontrollers, AR/VR, Nav2, Robot Kinematics
Machine Learning: PyTorch, CUDA, OpenCL, ConvNets, FFTs, Transformers, YOLO, GANs, Game Theory
DevOps: Docker, AWS[RDS|EKS|EC2|Lambda], Prometheus, Ansible, Jenkins, Kubernetes, CircleCI, CI/CD
Web/App Development: Swift, Kotlin, Django, React.js, Three.js, Node.js, Spring Boot, XCode, HTML, CSS
Electrical: Oscilloscope, Soldering, Circuit Analysis, PCB design, FPGA Programming, Embedded Systems

WORK EXPERIENCE

EL Tracker — el-tracker.com   October 2023 – Present
Founder and Sole Developer   Chicago, IL
- Built a Chicago transit app with Swift, Kotlin, Django, and Node.js, prioritizing accessibility features
- Designed the only transit app to work seamlessly for blind users, offering a fully accessible experience
- Received 3000+ downloads, an overall 5 star rating, and reached #46 in nationwide navigation apps
- Negotiated a partnership deal with Transit Tees to secure user base growth and operation costs

Sunrise Futures   January 2023 – January 2024
Senior DevOps Associate   Chicago, IL
- Reduced costs by redesigning a monitoring tool in C++ and SQL to fix trading issues, such as throttles
- Tested trading programs, Python scripts, and configs daily — releasing via Docker and Ansible
- Mentored junior developers weekly, teaching infrastructure, troubleshooting production issues

Datachat   January 2022 – January 2023
Software Engineer   Madison, WI
- Integrated clustering models, such as K-means, in a data analytics platform via PyTorch, BigQuery
- Deployed features via React and Go to clients such as Meta, by integrating feedback from weekly syncs

Leverage Lab   June 2021 – August 2021
Data Engineering Intern   Kansas City, MO
- Developed Google Cloud Pub/Sub for real-time data streaming and messaging between cloud components
- Automated data cleaning processes to support data science operations, improving efficiency and profitability

FEATURED PROJECTS

Gesture-Controlled Robot with AR Glasses & ROS2   December 2024 – Present
- Published a C++ ROS2 package enabling gesture-based robot control using AR Glasses
- Applied MediaPipe to detect gestures and control a mobile robot via ROS2 over a LAN connection
- Streamlined robot movement by implementing feedforward control for precise operations.
- Designed a gesture-based controller for Unitree Go2 robot dog and a 7-DOF Frank Panda robot arm

Robot Whack-a-mole Player   November 2024 – December 2024
- Collaborated to program a 7-DOF arm with ROS2 MoveIt library to control a servo-driven hammer
- Utilized YOLOv8 to detect mole illumination events with high speed and accuracy
- Implemented initial mole pose detection using OpenCV HSV tuning for responsive gameplay
- Rapidly prototyped a CAD model for the hammer and a custom game board to support gameplay functionality

Pen Grabber Robot   August 2024
- Programmed a 4-DOF PincherX 100 arm to locate and grasp a pen using OpenCV and RGB-D camera
- Calibrated the system with matrix transformations to align camera and robot frames for precision

Professional Chess Player   Apr 2009 – Present
- Achieved 2100 USCF (United States Chess Federation) Rating, ranking top 20 in Wisconsin
- Earned $6,500 by winning the Under-2000 Category at the World Open 2022 Chess Tournament