Morgan Dykshorn

23041 Meadowlark St.
Oak Park, MI 48237
https://www.linkedin.com/in/morgan-dykshorn/
morgandykshorn.com
✆ 804 380 5644
mdykshorn1@gmail.com

OBJECTIVE

Pursue software engineering position in robotics or machine learning

EDUCATION

M.S., Computer Science, *[Expected]* May 2022
Specialization: Machine Learning **Georgia Tech**, Atlanta, GA

B.S., Computer Engineering, May 2018
Minor: Computer Science **Virginia Tech**, Blacksburg, VA

WORK EXPERIENCE

General Motors

Autonomous Mapping Embedded Software Engineer *July 2020 - Present*

- Responsible for end-to-end feature development, including architectural design, implementation, testing, validation on vehicle and in simulation
- Notable features include multi-threading, map-matching algorithm and map caching
- Scrum lead for embedded team, collaborating with product owners and developers to ensure work is correctly planned, prioritized and developers are not blocked

Connectivity Integration Engineer *January 2020 – July 2020*

- Developed internal tools to triage fleet wide connectivity issues
- Root caused production database and communication issues to bring timely, cost-effective solutions
- Broke down multi-million row databases into digestible dashboards for leadership decision making

Automated Driving Software Engineer *August 2018 – January 2020*

- Built POC map data processing and packaging pipeline to unblock downstream development
- Used modern C++ paradigms to build production intent embedded mapping application
- Worked with international team to build and validate maps using integration tests and closed loop simulation

PROJECTS

Twitter Sentiment Analysis using multi-head transformer

- Built a multi-head attention transformer from ground up in pytorch
- Trained model to create indicator of stock price using tweets as the input

Numerical Digit CNN Classifier

- Trained CNN using Google Streetview dataset to classify any digit in a given image with 88% accuracy
- Built classification pipeline to identify digits, cluster numbers, and annotate the detected numbers

IGA Prognosis Dashboard

- React Dashboard built for IGA Patients to visualize their prognosis
- Performs a Machine Learning derived prognosis using decision tree model

AutoDrive Challenge, August 2017 – May 2018

- Perception team lead in competition converting a conventional vehicle to a level 4 autonomous vehicle
- Worked on all aspects of vehicle software including: sensor drivers, vehicle simulation, perception algorithms, and path planning

RELEVANT COURSEWORK

Undergraduate:
Introduction to Robotics
Applied Software Design
Data Structures and Algorithms
Embedded System Design
Network Application Design

Graduate:
Artificial Intelligence Techniques for Robotics
Artificial Intelligence
Machine Learning for Trading
Data & Visual Analytics
Computer Vision
Deep Learning

SKILLS

Experience: Docker, git, Jira, Multi-threaded systems, CAN, Computer Networking, AWS EC2
Languages: C++, C, Python, JavaScript, Java, MATLAB, HTML, CSS, SQL
Frameworks: QT, Robot Operating System, FreeRTOS, Boost, Eigen, OpenCV, pytorch, react, angular, node.js, spark, Heroku

ACHIEVEMENTS

GM Executive Reverse Mentorship, GM Track Website Development Lead, DFSS Black Belt

HOBBIES

Mountain Biking, Tennis, Camping, Skiing, Hobby electronics