

DAVID EXIGA

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EXPERIENCE

Software Engineer	Jun 2022 – Aug 2025
<i>General Motors</i>	<i>Austin, TX</i>
<ul style="list-style-type: none">Improved 2D detection and 3D registration computer vision models by 50% through synthetic data generationEnhanced defect inspection accuracy by 30% via 3D object registration testing and failure detectionReduced data pipeline latency from 5 minutes to 1 minute by developing scalable ROS2 microservices integrated with AWS cloud infrastructure for high-throughput data analysisAutomated robotic inspection systems by integrating a ROS2 API to control a FANUC CRX-10iA/L collaborative robot for pneumatic actuation and inspection automationEngineered a cost-effective line-scan camera system for collecting steel beam data, enabling the development of failure detection algorithms	
Hardware Engineering Intern	Sep 2021 – Nov 2021
<i>Maidbot</i>	<i>Austin, TX</i>
<ul style="list-style-type: none">Developed a regression model to predict poor robotic performance using statistical and ML methods, reducing manual inspection time by 30%	
Mechanical Engineering Intern	Jun 2021 – Aug 2021
<i>Texas Instruments</i>	<i>Dallas, TX</i>
<ul style="list-style-type: none">Designed high-precision opto-mechanical components for a 160W near-infrared laser used in industrial 3D resin printing, leading to a 10x cost reduction in prototypingApplied materials science and finite element analysis to optimize heat dissipation, optical alignment, and structural reliability	
Applications Engineering Intern	Jun 2020 – Jul 2020
<i>Wilder Systems Robots</i>	<i>Austin, TX</i>
<ul style="list-style-type: none">Ensured sensor calibration accuracy and robotic safety by designing plastic and sheet metal components	

EDUCATION

Georgia Institute of Technology	Expected Dec 2026
<i>M.S. Computer Science (Machine Learning Specialization)</i>	
<ul style="list-style-type: none">Relevant Coursework: Machine Learning, Reinforcement Learning, Deep Learning, AI for Robotics	
University of Texas at Austin	May 2022
<i>B.S. Mechanical Engineering (Robotics Concentration)</i>	

PROJECTS

Generating Music Using an LSTM Neural Network [link]
<ul style="list-style-type: none">Trained a recurrent neural network (LSTM) to model temporal patterns in 100 MIDI songs, generating unique pop music via stochastic sampling
Deep Learning Optimization with Generative AI [link]
<ul style="list-style-type: none">Implemented stable diffusion data augmentation (DiffuseMix) to double the training dataset with semantically diverse variationsTrained custom CNN and Vision Transformer architectures from scratch, achieving 8% and 1.49% accuracy boosts respectively by leveraging DiffuseMix

TECHNICAL SKILLS

Programming Languages:	Python, C, C++, SQL
Machine Learning and Data Science:	PyTorch, Keras, Scikit-learn, Tableau, Pandas, PySpark
Robotics and Engineering:	ROS, ROS2, Open3D, OpenCV, FANUC, SolidWorks, ANSYS
Cloud and DevOps:	AWS, Azure, Docker, Kubernetes, Linux, Git