

DIONDRE M. DUBOSE

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EDUCATION

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|-----------------------------------|---|------------------------------|
| The University of Texas at Austin | Computer Science / Artificial Intelligence, M.S. | Spring 2026 |
| The University of Texas at Austin | Electrical & Computer Engineering, B.S. Tech Core: Integrated Circuits | Spring 2023 GPA: 3.61/4.0 |

EXPERIENCE

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| Product, Test, and Validation Engineer - <i>Texas Instruments - Dallas, Tx</i> | June 2023 - Current |
| <ul style="list-style-type: none">Trimmed magnetic Hall sensors to meet design specifications and customer requirements.Developed C++ test programs to analyze and test magnetic position sensors.Contributed to the AI Task Force, generating TI-wide productivity enhancement ideas.Analyzed test data to extract valuable insights, improving team performance and product quality.Collaborated with design teams to troubleshoot VBOX, SCAN, and IDDQ issues.Worked extensively on ETS88 and ETS364 testers, ensuring accurate and reliable test results.Utilized test benches and validation benches to simulate and validate sensor performance.Applied hands-on experience with I2C, SPI, and USB interfaces to ensure proper integration and functionality of test equipment. | |
| Test Engineering Intern - <i>Texas Instruments - Dallas, Tx</i> | May 2022 - Aug 2022 |
| <ul style="list-style-type: none">Developed C++ test programs to analyze and test magnetic position sensors.Created a script to rotate a magnet, testing the magnetics at probe and final test stages.Designed and implemented a loadboard checker, ensuring proper routing of instruments from the tester to the device under test.Tested device specifications in various operational modes, ensuring compliance and performance.Ran diagnostics on AMR and Hall sensors using Eagle ATE.Developed software tools and scripts to support test processes, program debugging, and test time analysis.Conducted thorough validation bench tests to verify sensor accuracy and reliability, gaining hands-on experience with I2C, SPI, and USB buses to troubleshoot | |
| Supplemental Instructor/Teacher's Assistant - <i>University of Texas at Austin</i> | Aug 2020 - May 2022 |
| <ul style="list-style-type: none">Led SI sessions for introductory courses (ECE 307E, ECE 306, and ECE 319K/H) in electrical engineering, computing, and embedded systems, improving student grades by up to a full letter grade.Held office hours, graded assignments, and created exam questions for courses covering circuit analysis, digital logic, microcontrollers, and programming.Assisted students with Python, 2 assembly languages, and C programming, enhancing their coding skills and problem-solving abilities.Developed and facilitated collaborative learning activities, fostering a deeper understanding of course material.Enhanced student engagement and retention through interactive, peer-assisted study sessions.Taught components of x86 architecture, DDR2/3 memory interfaces, and USB, preparing students for industry challenges. | |
| Federated Learning and Depth Estimation on Edge Devices Research - <i>University of Texas at Austin</i> | Aug 2022 - May 2023 |
| <ul style="list-style-type: none">Developed a federated learning system using UNET architecture with a MobileNetV3 backbone, achieving a RMSE of 0.45 and SSIM of 0.89.Utilized NVIDIA Jetson Nano and Microsoft Azure Kinect RGB-D cameras for real-time depth prediction, processing datasets from NYU V2 and UT Austin classrooms.Engineered a robust communication protocol with sockets and messages to ensure fault tolerance and efficient data transfer.Optimized model performance through hyperparameter tuning and federated averaging, improving depth prediction accuracy by 15%.Implemented error handling techniques to prevent data corruption and ensure continuous operation despite device failures. | |
| SuperTuxKart Hockey AI Development - <i>University of Texas at Austin</i> | Spring 2024 |
| <ul style="list-style-type: none">Developed a state-based SuperTuxKart hockey player using Imitation Learning (IL) and Reinforcement Learning (RL).Designed a neural network architecture with linear, ReLU, and dropout layers.Collected and normalized 93 input parameters, optimizing model performance.Employed Adam optimizer, minimizing Mean Squared Error (MSE) loss.Achieved an 84% success metric, surpassing industry standards.Tools: Python, OpenAI Gym, TensorFlow/PyTorch, NVIDIA GeForce RTX 3060, Google Tesla T4.Key Skills: Deep Learning, Reinforcement Learning, Imitation Learning, Neural Networks, Model Optimization, Game AI Development | |

CERTIFICATIONS

- AWS Certified Cloud Practitioner**, Amazon Web Services (AWS)
Issued Sep 2023, Expires Sep 2026
Skills: Amazon Web Services (AWS), Cloud Computing
- Machine Learning Specialization**, Coursera
Issued Sep 2023, Expires Sep 2026
Skills: Amazon Web Services (AWS), Cloud Computing

SKILLS

Technical: Python, C, C++, Java, TensorFlow, PyTorch, Scikit-Learn, SQL, CSS, HTML, AWS, I2C, SPI, USB, SATA, x86 architecture, DDR2/3 memory interfaces, Test benches, Validation benches, Cmake

Skills I Would Like to Learn: PCI, PCIe, LPC, and SATA interfaces, GPU programming, Parallel Systems, and Distributed Computing