DOUG MULKA

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EDUCATION

Kettering University **Graduated 2020**

Bachelor of Science in Electrical Engineering — *Cum Laude*

WORK EXPERIENCE

LightGuide Inc. **2021 - 2025**

Senior Software Developer

- Increased manufacturing throughput and reduced defects by designing and deploying **unique augmented reality solutions** tailored to optimize factory workflows.
- **Filed 2 patents advancing automation** through novel approaches to diagnostic scanning and automated component configuration. (US Application No. 63/493,861 & 63/493,857)
- **Cut system configuration time by over 70%** by inventing an automated internal diagnostic and pre-integration tool.
- **Realized $17M+ in cost savings** for aerospace operations by implementing a custom asynchronous control system integrating 30+ sensors, cameras, actuators, and networked components.
- **Reduced assembly time by 32% and achieved zero defects** by leading development of a machine learning-powered part-kitting system.
- **Eliminated manual migration work** by creating a package management tool to automate work instruction transfers for system cloning and maintenance.
- Managed the full **software development life cycle**, from requirements gathering, **developing front-end and back-end solutions**, feasibility testing, on-site software installation, and long-term product support.
- **Enabled fully automated AR-driven workflows** by developing systems interfacing with SQL databases, MES platforms, and PLCs.

General Motors **2019 - 2020**

Controls Engineer

- **Increased production throughput by 17%** by commissioning robotic workstations with Fanuc robots and Allen-Bradley systems
- **Reduced unplanned downtime by over 2 hours** through optimization of ladder logic in production systems.
- **Reviewed and updated electrical schematics** for factory automation projects, ensuring compliance with safety standards and supporting seamless maintenance and future scalability.

Delphi / Aptiv **2017 - 2019**

Electrical Engineer

- **Achieved ±0.01 cm precision** through development of a microcontroller-based precision optical alignment stage actuator.
- **I**mproved ADAS feature reliability by **executing over 350 hours of on-road vehicle testing** and validating data for adaptive cruise control and traffic jam assist.
- **Detected and resolved 15+ sensor anomalies** through in-depth analysis of LiDAR and radar datasets.

SKILLS

Languages/Frameworks: Visual Basic, .NET, SQL, C, C++, C#, JavaScript, Python, MATLAB, WinForms, VBA

Software & Tools: Visual Studio, Git, SQL, Arduino, WireShark, Raspberry Pi, Figma, LTspice XVII, Power BI, Azure Kinect, Cognex In-Sight, Jira, Fusion 360, NX

Industry Knowledge: Database Design, Software Architecture, Augmented/Virtual Reality (AR/VR), Artificial Intelligence (AI), Machine Learning (ML), Ethernet, Serial Communication, Modbus, TCP/IP, I2C, BLE, Agile Methodologies, Test-Driven Development, 3D Printing, Machine Vision, PLC Integration, IoT/IIoT, RTOS, API Communication, ITAR Compliant, UX/UI Design