Grigor Pahlevanyan

pahlevag@mcmaster.ca +1 647-450-8086 Portfolio Grigor Pahlevanyan Grigor-Pahlevanyan

Education

McMaster University, B.Eng. in Mechatronics Engineering with Coop — Sept 2020 – May 2025

- GPA: 3.8/4.0
- **Coursework:** Control Systems, Software Development, Predictive Intelligence, Embedded Systems, Digital and Analog Circuit Design, Data Structures & Algorithms, Thermodynamics

Professional Experience

Tesla | Power Electronics Program Manager Intern — Palo Alto, CA, May 2024 – Aug 2024

- Managed four vehicle projects, ensuring timely milestone delivery.
- Established clear communication channels across management layers.
- Developed project roadmaps and delegated tasks to cross-functional teams.
- Demonstrated adaptability and productivity in a fast-paced environment.
- Built stakeholder confidence through clear communication and consistent delivery.

Thales | Component Engineering Intern — Toronto, ON, May 2022 – Aug 2023

- Automated database migration of 1000+ components using Python and Selenium.
- Managed component databases and maintained detailed documentation.
- Processed ECN requests, ensuring compliance with technical specifications.
- Conducted obsolescence analysis to identify supply chain risks.
- Optimized component selection through cost and performance analysis.

Extracurricular Experience

Battery Workforce Challenge | BMS Hardware Lead — Sept 2024 – Present

- Leading BMS hardware development, managing a team of 8 engineers.
- Coordinating with cross-functional teams for system integration and performance.

Solar Car Project | Electrical Manager — Nov 2021 – Aug 2024

- Managed electrical team workflow and inter-department coordination.
- Designed 110V high-voltage electrical architecture for power distribution.
- Developed Automatic Transfer Switch with integrated control systems.
- Created pre-charge circuit board for motor controller integration.
- Engineered 96V battery pack with comprehensive BMS implementation.
- Designed Power Management board for system-wide power control.
- Implemented Pedal Control program with analog-to-PWM signal conversion.
- Utilized Altium and Eagle for PCB design and manufacturing.
- Researched and implemented Maximum Power Point Tracker (MPPT) devices.
- Engineered a 110V battery pack with comprehensive BMS implementation, ensuring real-time monitoring and fault detection.

Technical Projects

Vehicle Safety Mechanism | Independent Research Project — Nov 2021 – Present

- Invented a safety seat system using LiDAR for collision detection.
- Developed AI-driven algorithms for real-time seat position adjustment.
- Integrated NVIDIA Nano Jetson, AGX ORIN, and Oak-D Lite 3D camera.
- Engineered control systems using stepper motors and high-power transformers.
- Patent application in progress; documentation available at project portfolio.
- Designed and simulated safety protocols using MATLAB and Simulink to ensure compliance with automotive safety standards.

AI Meeting Assistant | visit at chatwithama.com — Sept 2024 – Present

- Developed an advanced meeting analysis system utilizing OpenAI's Whisper for high-accuracy speech recognition and transcription.
- Implemented speaker diarization using pyannote for precise speaker identification and segmentation within conversations.
- Integrated LLM models, including Ollama 3.2, for automated generation of meeting minutes, action items, and summarization of key discussion points.
- Designed and developed a web-based interface using React.js, JavaScript, and Python, enabling real-time analytics and insights.
- Deployed the solution using Docker for local hosting and scalable deployment, ensuring efficiency in processing high-volume meeting data.
- Designed a custom microphone using Altium for optimized voice capture, performing signal processing with STM32 for enhanced audio quality.
- Manufactured PCBs using JLCPCB for seamless hardware integration and testing.

Publications

Vehicle Seat Design to Mitigate Collision Impact on Occupant Safety — July 2023

BRIC Symposium Proceedings
Certificate of Participation

Technical Skills

Software Development: C++, C, Python, Julia, MATLAB/Simulink, Git, Docker, React.js, Node.js

Electrical Design: Altium Designer, Eagle, Fusion 360, LTSpice, NI Multisim, KiCad

Mechanical Design: SOLIDWORKS, Autodesk Inventor, AutoCAD

Machine Learning: Neural networks, reinforcement learning, model predictive control, LLM integration

Embedded Systems: ESP32, STM32, ARM Cortex-M, FPGA design, I2C, SPI, CANbus, UART

Other Tools: SAP ERP, CleaQuest, GitHub, Wireshark, JIRA, Confluence, Polarion, Docker, ROS, Linux administration

Hardware Prototyping: Custom PCB design with Altium, JLCPCB manufacturing, soldering, signal processing, oscilloscope debugging