David Angelo

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Education

University of Toronto — Toronto, ON
Bachelor of Applied Science in Engineering Science — *Expected June 2030*
- **CGPA**: 3.68/4.0, **Honours**: Dean's List (Fall 2025), The Shaw Admission Scholarship

Projects

Analysis of JPEG Image Compression | *Python, LaTeX, Academic Research* — May 2024 – Feb. 2025
- Authored a **4,000-word independent research paper** including **literature review**, **background research** gathering, implementation, and **critical evaluation** of compression methods and their efficiencies
- Demonstrated JPEG data reduction on **8×8** pixel blocks through frequency-domain transformation using the 2D Discrete Cosine Transform (DCT-II) on **8-bit** grayscale images

Optimizing a Swimmer's Dolphin Kick | *Excel, Desmos, Calculus, Academic Research* — Sep. 2024 – Jan. 2025
- Modeled underwater dolphin kick motion and evaluated conditions for maximal underwater velocity through self-gathered **70+** data points over **2.40** seconds using video tracking analysis
- Produced a **6,000-word** quantitative **research paper** integrating a clear **methodology**, calculus-based **modeling**, **empirical data**, and error **analysis** to justify optimization conclusions

Matboard Bridge Design | *CAD, Python, Engineering Design* — Nov. 2025 – Dec. 2025
- Designed and tested a matboard truss bridge in a team of **4** using statics and **load-path analysis** across **5+** iterations, achieving a maximum sustained load of **450 N** and a cumulative failure load of **1250 N**
- Optimized truss member geometry through **Python simulation** of **shear and bending diagrams**

Glove Doffing Device | *Fusion 360, LaTeX, Prototyping, Drafting* — Sep. 2025 – Dec. 2025
- Engineered **3+** glove-removal devices through **3-D Design Software** using iterative prototyping and testing
- Evaluated accessibility constraints through **proxy tests** in a team of **5** to maintain applied forces **below 22.2 N**, weight **below 500 g**, doffing time of **8.82 s**, and reduced contact rate from a documented **37%** to **5%**

Technical Skills and Interests

Programming Languages: Python (NumPy, matplotlib), MATLAB, C
Software and Tools: Visual Studio, LaTeX, Excel
Research Interests: Biomedical engineering, biological systems, modeling, optimization of healthcare systems

Work Experience

City of Mississauga — Mississauga, ON
Advanced Leadership Instructor, First Aid and Lifesaving — *Sep. 2025 – Present*
- Instructs **first aid** and **aquatic lifesaving procedures** to **15** candidates, with a pass rate of **86%**, enabling participants to serve as certified first aiders
- Apprenticed under a senior first aid instructor, resulting in independent responsibility in professional environments

Lifeguard and Swim Instructor — *Aug. 2023 – Present*
- Teaches swimming skills to **150+** youth through progressive development, building water confidence and safety
- Supervises up to **100** patrons simultaneously and mentored **5+** junior instructors compliant to standard policy

Team Experience

Engineering Competition Team Experience — Mississauga, ON
Glenforest Secondary School — *Sep 2023 – May 2025*
- Calculated cutting angles for **5+** chassis members using measurement data from CAD drawings, reducing rework and fabrication error to **<5 mm** variance for the **2025 Waterloo Electric Vehicle Challenge**
- Secured **$5,000+** as a team in sponsorships through outreach and outcome reporting campaigns to **10+** organizations, enabling registration fees and robot materials for the **2024 FIRST Robotics Competition**

Additional

Certifications: First Aid and CPR, First Aid Instructor, LSS Examiner, Pleasure Craft Operator, NLS
Achievements: MusicFest National Silver Awards (2023, 2024), FRC Team Sustainability Award (2024)