

# Alexandre Eberhardt

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## Education

<b>Université Laval</b> , <i>Master's in Computer Engineering (M.Sc)</i>	Aug 2025 – Apr 2027
GPA: 4.17/4	
<b>Courses:</b> Computer Vision, Mobile Robotics, Algorithms, SOLID Principles, Kalman Filtering, Computational Complexity.	
<b>Université de Technologie de Compiègne (UTC)</b> , <i>Computer Engineering Degree</i>	2021 – Apr 2027

## Experiences

<b>Software Engineer Intern</b> , <i>Savoir-faire Linux — Montreal, Canada</i>	Aug 2024 – Feb 2025
• Modernization of the extension system for <b>Jami</b> (Open-source P2P Softphone).	
• Integration of Deep Learning models ( <b>YOLOv11-seg</b> ) for video masking with <b>ONNX Runtime</b> in C++.	
• Performance optimization: inference time reduction ( $\div 10$ ) via <b>NVIDIA CUDA/cuDNN</b> hardware acceleration.	
• Resolution of complex cross-platform compilation issues (Android NDK, macOS) and development of reactive interfaces in <b>QML</b> .	

## Projects

<b>Arduino Jukebox</b>	2024
• Design of an interactive audio embedded system in <b>C++</b> on Arduino.	
• Integration of hardware modules: <b>RFID</b> badge reading for music selection and audio management (DFPlayer).	
• Development of control logic and hardware interrupt management.	
<b>Mastery Bot Brawl Stars</b>	2024
• Development of an automation bot in <b>Python</b> to optimize game progression.	
• Implementation of <b>Computer Vision</b> (image/state detection) for real-time screen analysis.	
• Programming of input simulation scripts and decision-making logic.	
<b>Eye Tracking System (Computer Vision)</b>	2025
• Development of an eye-controlled mouse interface for people with reduced mobility (Course GIF-7001).	
• Design of a stereoscopic system (2 cameras) with <b>Thin Plate Spline</b> calibration for precise gaze projection on screen.	
• Use of <b>MediaPipe</b> for facial landmark extraction and <b>OpenCV/NumPy</b> for image processing and 3D reconstruction.	
• Implementation of voluntary blink detection for clicking and <b>Tkinter</b> interface.	

## Technical Skills

**Programming Languages:** C++, C, Python, Java, JavaScript, CUDA, SQL, MATLAB, Rust, QML

**Tools:** Git, Docker, CMake, ONNX Runtime, Android Studio, Linux, Qt, Gerrit

## Leadership & Community Involvement

<b>Student Vice-President</b> — UTC, Council of Studies and University Life	Nov 2023 – Nov 2025
• Elected representative of 5,000 students, voting on academic reforms and budgets.	
• Management of grants for student initiatives.	
<b>Secretary &amp; Board Member</b> — Technology and Entrepreneurship Cluster (UTC)	Feb 2025 – Aug 2025
• Updated statutes (Law 1901) and provided administrative support for 17 student clubs.	
<b>President &amp; Association Manager</b> — UTC (Various Associations)	2021 – 2025
• President of the Comic Book Library, President of the Japanese Culture Club.	
• IT Manager for end-of-semester events.	

## Languages

French (Native), English (Fluent)