

# MASSIMO ALBANESE

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## EDUCATION

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### B.Eng. Software Engineering, IoT Specialization - Ontario Tech University

Oshawa, Ontario | 2018 - 2024 | *President's List Winter 2020 & Fall 2023, Dean's Honours List Fall 2021 & Fall 2022*

## PROFESSIONAL EXPERIENCE

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### Process Analyst – H2Flow Equipment Inc.

Vaughan, Ontario | 2023 – Present

- **Consulted with stakeholders** across sales, engineering, accounting, and more to **analyze company processes**
- **Mapped** complete operational workflows to **prepare for ERP system implementation**
- **Identified inefficiencies** and integration opportunities through **detailed process analysis**
- **Led** cross-functional discussions to **align on process improvements** and system needs
- **Created** a foundational **operational blueprint** to **guide ERP integration**

### IT Specialist - H2Flow Equipment Inc.

Vaughan, Ontario | 2018 – 2019

- **Collaborated** with sales, engineering, and HR to develop **custom software solutions** for operational efficiency
- Transitioned sales tracking from Excel to a **MySQL database**, maintaining Excel integration for user accessibility
- **Enhanced system reliability** and **reduced user errors** by over **90%**, enabling multi-user access and data integrity
- **Maintained local file servers**, web servers, and provided IT support for a network of over 40 computers

## PROJECTS

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### MedAssist – IoT Smart Medicine Cabinet

2023 – 2024 | [github.com/madlitch/magicmirror](https://github.com/madlitch/magicmirror) | *1<sup>st</sup> Place, Capstone Design Competition, Ontario Tech University*

- **Engineered and orchestrated** the design and assembly of a smart medicine cabinet for patients with dementia
- **Engineered 3D-printed**, solenoid-actuated dispensers for reliable medication delivery
- **Implemented Python and OpenCV-based** computer vision algorithms for medication intake tracking
- **Built a robust Node.js and Express backend server** for enhanced API efficiency
- **Integrated Sequelize ORM** for database operations, facilitating secure and efficient data management
- **Deployed the system using AWS S3** and managed databases via **AWS RDS** for scalable access

### StringShare – Distributed Social Media Network

2023 | [github.com/madlitch/stringshare](https://github.com/madlitch/stringshare)

- **Developed a decentralized social network** inspired by Mastodon using **Python, FastAPI, and PostgreSQL**
- **Engineered a pub-sub server protocol** for real-time data sync across decentralized servers
- **Utilized Docker and Docker Compose** for scalable backend infrastructure
- **Implemented Single Version of Truth** for immutable data consistency across the network
- **Created RESTful API endpoints** for a React Native application

### MadPixelSort – Image & Video Pixel Sorting Application

2021 - 2022 | [madpixel.software/madpixelsort](https://madpixel.software/madpixelsort)

- Developed a **cross-platform desktop application** using **Electron, JavaScript, and Rust** to create pixel sorting effects
- **Conceptualized and engineered** the entire project, **launching it in the market** and achieving commercial viability
- **Designed and implemented** a high-performance **multi-threaded Rust algorithm** for image processing and sorting
- Crafted an **intuitive and responsive user interface** with **HTML, CSS, JavaScript, and Bootstrap**
- Developed a **robust cryptographic DRM system**, ensuring secure license key activation on a per machine basis

## SKILLS

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**Programming Languages:** Rust, Python, Java, Flutter, Dart, C, C++, JavaScript, HTML, CSS, Swift

**Technologies:** PostgreSQL, MySQL, Bootstrap, Docker, Electron, FastAPI, Git, jQuery, Node.js, Express, SQLAlchemy

**Other Skills:** OnShape, Solidworks, AutoCAD, Microsoft Windows, Mac OSX, Linux, Photoshop, Microsoft Office, Adobe XD

**Languages:** English, French, Italian