





# Art Nguyen

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## Skills

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- C | C++ | C# | Python | VHDL | HTML w/Bootstrap | XAML | CSS | Java | TS | JS | Node JS | SQL |
- Front-end | Back-end | Unit-Testing | PCB Design | Embedded Systems | Computer Architecture
- Data Structure & Algorithms | Deep Learning | API Integration | Documentation | Database management
- App Development and Deployment | English, Vietnamese - All at advanced proficiency or above
- Docker | Raspberry Pi | Slurm | Flask | Django | AutoDesk Maya | Blender | Linux | Windows

## Tools

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- VS Code | VS 2022 | Quartus II | Vivado(2019/2023) | Vitis | MySQL | Tensorflow | Agile(Jira) | .NET
- PostgreSQL | SVN | VSS | Git | Github | Bitbucket | Remote Desktop | PuTTY | Powershell | NPM | Altium
- Azure | Firebase | Google Cloud | Flask | ASP(.NET) | Angular JS | Avalonia | WPF | Apache | VMware
- Docker | Raspberry Pi | Slurm | Flask | Django | AutoDesk Maya | Blender | Linux | Windows

## Experience

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### Software Engineering Intern

January 2025 - Present

#### C Speed, LLC - Liverpool, NY

- Developed an in-house application that allows HR and Accounting to quickly transfer mass sensitive information between two services to expedite the entire company's payroll process and save labor costs.
- Solo rewrote a codebase to turn a production application cross-platform for OSx, Linux, and Windows.

### Assistant Researcher

April 2024 - December 2024

#### AI Vision, Health, Biometrics, and Applied Computing - Clarkson University

- Designed and implemented a custom FPGA overlay for the Kria KV260, enabling serial communication (I<sup>2</sup>C, UART) with external peripherals, encoder stepper motors, and bipolar stepper motors to control a robotic hand. Developed an interrupt-driven sub-system to manage the hand's subroutine operations.
- Collaborated closely with team members to design and create PCB schematics for the Kria KV260's carrier card, allowing the team to apply a custom-made AI computer vision model and control external peripherals to run the robotic hand.
- Conducted research on ridge-to-ridge distance algorithms for fingerprint analysis, contributing to the improvement and expansion of the NIST Fingerprint Image Quality 2 (NFIQ 2.0) open-source software.
- Created a high resolution fingerprint sensor(up to 1600DPI) and image processing routine, allowing accurate captures of infant fingerprints.

### IT Assistant and Database Manager

Summer 2019 - Summer 2021

#### Pediatric Medicine Clinic – PGS.TS.Doctor Phạm Thị Minh Hồng(Vietnam)

- Implemented and managed a database system to track daily medicine imports, exports, and medical expense statements in compliance with Vietnam's Ministry of Health regulations. Ensured accurate and efficient operations of the clinic's inventory and financial reporting.
- Provided technical support to clinic patients, resolving IT issues related to online payments, medical expense discrepancies, and other technical challenges.

## Projects

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### Hardware Accelerated AI Fingerprint Sensor and Authentication system purely on an FPGA

- Built a fingerprint sensor that is able to capture and process fingerprints then hardware accelerates a Siamese neural network model through a deep learning processing unit to authenticate biometric characteristics of a fingerprint to verify user identity entirely hosted on an FPGA.

### FPGA Text Editor

- Engineered an interrupt-driven text editor entirely on an FPGA, accepting PS/2 keyboard inputs and displaying text on a 640x480 VGA screen. Stored text and RGB color data for each character in on-board BRAM.

### Breached Credentials Detector

- Developed a Flask-based web service to check if user credentials have been compromised, leveraging cryptographic hashing to securely manage up to 30 million email-password pairs with SQL-based backend storage.