Art Nguyen

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I'm actively seeking full-time software engineering or FPGA-related positions where I can apply my expertise in full-stack development and/or embedded systems.

Skills

- **Languages**: C, C++, C#, Python, Java, JavaScript (TS/Node.js), SQL, HTML/CSS/Tailwind, VHDL, XAML
- **Frameworks:** WPF, ASP.NET, AngularJS, Avalonia, Next.js, React, Flask, Django, SPFx, ROS2(Humble), QT, Autoware
- **Domains:** Full-stack Development, Embedded Systems, Computer Architecture, Autonomous System
- **Key Skills:** DSA, API Integration, Unit Testing, App Deployment, Documentation
- **Spoken Languages:** English, Vietnamese

Tools

- **IDEs & Dev Tools:** Visual Studio (Code & 2022), Vivado (2019/2023), STMCube(IDE & ProG), Eclipse IDE, Vitis, Quartus II, Git (GitHub, Bitbucket), Jira (Agile), Azure DevOps
- **Databases:** MySQL, PostgreSQL, MongoDB
- **Cloud & Environment:** Azure, Google Cloud, Firebase, Docker, Apache, VMware
- **Other Tools:** FPGAs(and SOMs), Remote Desktop, PuTTY, Powershell, AutoDesk Maya, Blender
- **OS:** Linux, Windows

Experience

Software Engineering Intern — January 2025 - May 2025

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 majorly reduce labor costs.
- Solo rewrote an existing C# desktop application to make it cross-platform, extending compatibility to macOS, Linux, and Windows.
- Collaborated closely with the Director of Operations to build a new company portal using Microsoft SharePoint, incorporating custom SPFx web parts and automated workflows with MS Power Automate.

Assistant Researcher - Clarkson University

AI Vision, Health, Biometrics, and Applied Computing Lab — **April 2024 - Present**

- Developed a custom **FPGA** overlay for the Kria KV260, enabling I²C, UART, and motor control (servo, encoder stepper, bipolar stepper) for a robotic hand; Integrated a **Deep-learning Processing Unit (DPU)** to hardware accelerate custom YOLOv7 AI models for real-time inference on the robotic hand.
- Designed and created a high-resolution (up to 1600 DPI) fingerprint sensor and image processing pipeline for accurate infant fingerprint capture.
- Developed a **websocket-based application** to allow manual recording of EEG brainwaves using Emotiv's EPOC X
- Designed and assembled custom **LoRa + STM32** PCBs to be integrated onto Chirpstack framework for a smart farm.

CAMEL: Cybersecurity, Autonomous system, and Machine learning Engineering Lab — **June 2025 - Present**

- Created custom vehicle models and custom point cloud + vector maps to simulate autonomous vehicles on Autoware.
- Integrated **Autoware** onto the **Scout 2.0 vehicle platform**, enabling fully autonomous driving on real streets.

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.
- Handled a daily patient load of 50–100, providing technical support to resolve IT issues related to online payments, medical records, and financial reporting.

Projects

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 60 million email-password pairs with SQL-based backend storage.