Maryam Zahiri

Software Engineer

Address Vancouver, BC
Email mary.zahiri00@gmail.com
GitHub https://github.com/MaryamZahiri
Phone 1-778-984-6120
LinkedIn https://www.linkedin.com/in/mary-zahiri/
Portfolio https://maryamzahiri.github.io/

Software engineer with extensive experience in **software**, **gaming**, **embedded** systems, **robotics/AI** and **cloud**. Proven expertise in developing **cross-platform** solutions using **GPC**, **Python**, **JavaScript** and **C/C++** to enhance functionality and efficiency in complex systems.

WORK EXPERIENCE

Software Engineer

Collective Minds, Gaming Industry won awards & known as top seller, Vancouver, Canada *May 2022 – Present*

Working on software and ARM **embedded** software to develop middleware to front-end, server-client, master and slave applications

- Optimized cross-platform GamePack code using **GPC** (**C**-based) and **Python** for embedded systems, Xbox/PS4 controllers and mobile apps, improving user experience by 68%.
- Structured and **modularized GPC** source code, segmenting functions into manageable modules to streamline maintenance.
- Merged **GPC modules** using a custom **Python**-based pre-compiler, generating binary and JSON outputs for seamless push-pull data integration between the Strikepack system and mobile app, resulting in a significant reduction in data processing time.
- **Compiled** and **debugged** over **12k** lines of **large-scale GPC** code with a **Python**-based pre-compiler, verifying controller I/O on the Zen system to ensure GamePack app functionality.
- Implemented **computer vision** techniques (YOLO, template matching, masking, shape detection) to automate gameplay analysis, reducing manual input and errors, enhancing game development efficiency. (Read More)
- Developed custom Web Components to create **HTML** tags, **CSS** styles, and **JavaScript** templates using Visual Studio Code and Android Studio, leading to streamlined front-end UI **app product** (Strikepack Central Mobile App) for games. (Read More)
- Developed generator, mod, and patented macro codes in **GPC** for **cross-platform** protocols, supporting games like SF6, MK, FIFA, and GTA using Visual Studio Code, Zen Studio, Android Studio and a custom pre-compiler in **Python.**

Skills: GPC, Python, JavaScript, HTML, CSS (Read More)

Embedded Software Engineer *Feb. 2021 – May 2022*

- Integrated **RTOS** for **firmware** (stm32 ARM-based) and **Bluetooth** stack in **C/C++** by Visual Studio and Chibi Studio on **UART**, **USB** interfaces and **drivers**, board, **Hal**, and created debug configuration via OpenOCD, and MCU configuration.
- Developed **bootloader** in **C** for samd21 Atmel via **UART, USB** driver, **HID, CDC, MSC, I2C** using Microchip Studio and MPLAB IDE.
- Converted Backbutton **bare metal** code from stm32 platform to SAM platform using **I2C** interface in **C/C++** by Visual Studio.
- Developed an **android chat** application as a **client** via **Bluetooth** in **Java** using Android Studio.
- Developed **Bluetooth chat** application as a **server** over an interface between BlueNRG using **C** and a mobile application.
- Programmed a strike pack using BlueNRG and STM32 (Arm-based) via **I2C** using **C** in master and slave, debugged via ST-link.

Skills: C++, C, Java (Read More)

Software Engineer

OFF-GRID GAS, Design & Operate small-scale & pilot gas Systems, Vancouver, Canada *Jan. 2020 – Dec. 2020*

Developed software to automate processes and log data for smart embedded systems, accessible on cloud, servers, and web

- Built a server-based web app using microcontroller and Linux with **MySQL, PHP, Python, C++**, and **HTML** (**LAMP**) to automate data storage, improving access and reliability of data on the server.
- Developed smart **IoT** automation for data logging on an embedded system, integrating **Python**, **Shell**, and **C++**, resulting in efficient data management**.**
- Developed scripted notifications and APIs using **Bash** and **Python**, automating web requests and event triggers on servers, lowering travel costs by 30%, and saving time through process automation.
- Developed software for detection applications using **C++** for calibration and data monitoring through UART, I2C, SPI, USB, and Wi-Fi, resulting in enhanced system accuracy and responsiveness**.**
- Developed **Python** and **Bash** scripts to update real-time data, parsed codes into distinct columns, and automated file transfers via **Google** server and Dropbox **cloud API**, improving workflow efficiency.

Skills: Python, MySQL database, PHP, C++, HTML (Read More)

Internship *May 2019 – Dec. 2019*

- Integrated **Python** code for local data logging using **C++** on an ARM operating system, AVR microcontroller and SD card module, improving data retrieval efficiency
- Developed **IP networking** support, including port forwarding, NAT, and bridging through **command-line**, integrating these features into an ARM-based operating system to create a dynamic router

Skills: Python, command lines, basic programming language

Software Engineer

CEZANNE, Innovative Interior Design and Construction Management Solutions, Iran *Nov 2016 – June 2018*

Development of cost-effective business solutions and automated performances

- Programmed a custom software application for auto-tracking and extracting product information, and business expenses through web scraping using **Python** and **HTML**, meeting project constraints for time and budget.
- Developed customized **software** for computational information, and financials by integrating **Python** in Linux operating system.

Skills: Python, HTML, shell scripts

Part-time *Jan. 2015 – Oct. 2016*

- Gained extensive experience in **C++** and **C#**, resulting in enhanced software development and programming proficiency.
- Led the development of a user registration form in **C#** with **SQL** Server, ensuring validation of user information.

Skills: C++, C#, SQL

EDUCATION

Master, Mechatronics Engineering, UBC, Vancouver, Canada *Sep. 2018 – June 2020*

Robotic Project, CARIS Lab, UBC, Vancouver, Canada (Read More)

Implemented a real-time application for the QR Code recognition in **Linux** environment based on Robot **computer vision, C++**

- Developed a QR code detection and tracking process in **C++** for a robot with **ROS** on Intel, improving navigation responsiveness.
- Deployed face detection algorithm, followed the nearest person by a mobile robot in **Python** using **computer vision** in **Linux**

Human Interface Technology Project. (Read More)

- Developed a **Python**-based platform for detecting non-speech sounds, utilizing **OCR** and **deep learning** for text recognition.

AWS Cloud Integration Project

- Strengthened **AWS cloud** skill in real-time data streaming and supervised **ML** in **Jupyter** Notebook and **S3.**

Bachelor, Robotics Engineering, SUT, Shahrood, Iran *Sept. 2010 – July 2014*

Robot Vision Project, ROBOT Lab, SUT, Shahrood, Iran

- Stereo vision **Images Processing** for **object distance detection** using **MATLAB**, enhancing depth perception.

AWARDS

Winner in Hackathon

1st & 2nd award, ICP Hub and NexusGPT, Vancouver, Canada (Read More) *May 2024*

- Developed **web** application for medical **AI** services using **JavaScript**, CSS, **html**, **Python** (flask), **AI** and **docker** in **wsl** terminal.

1st-ranked winner, Sick Solution Intelligence & NTTDATA, Waldrich, Germany (Read More) *Oct. 2023*

- Applied Google's pose estimation model using **Python**, **Computer Vision** to improve genAI system.

TECHNICAL SKILLS

Software Skills

Python, GPC, JavaScript, HTML, CSS, CV, C, C++, Java, C#, Bash, MySQL, PHP, Scripting, source control

Hardware Programming Skills

ARM Embedded systems/Firmware, Robotics/ROS, IoT, Integrated Circuits, Microcontroller/AVR, FPGA