# Profile Summary

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**Total Experience**: 2 Years & 9 Months

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| **Key Expertise:** |
| * B. Tech in Computer Science and Engineering with experience in Cloud services such as AWS and is Azure Az-900 Certified. * Developed micro services on Spring Boot and created a website using React which was hosted on AWS ECS. * Developed use cases using Image Processing and Deep Learning, a flask application was created to access the model which was then been deployed on AWS Services by using Docker containers. * Created a GUI for STM32 microcontroller using TouchGFX and Embedded Wizard. |

**Educational Qualification & Certifications**

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| B. Tech | Computer Science and Engineering, SRM Institute of Science and Technology (2016-2020) |
| Certifications | Azure Fundamentals, AZ-900 |

**Skills**

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| Domain | Software design and development |
| Programming Language | Python, OpenCV  Spring, React, NodeJS, Flask, SQL  UI/UX design – TouchGFX, Embedded Wizard  AWS/Azure  Docker |
| Tools | Anaconda  Microsoft Visual Studio, Spring Boot, Postman  STM32IDE, TouchGFX Embedded Wizard Studio  AWS/Azure CLI, Sqlectron  Docker CLI, Linux |

**Project Details**

**Project 1:**

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| Project Name | **Machine Vision Database Migration to AWS-RDS** | Team Size | 1 person |
| Description | Handled the architecture and Security permissions required to send and receive data from the AWS RDS from our Machine Vision GUI. | | |
| Role & Contribution | Role:  Software Engineer / Cloud Practitioner  Responsibilities:   * Creation of Database on AWS-RDS * Provided necessary permission and security to the RDS. * Established connection directly to the RDS using PyMYSQL. * Added Backups in other Availability Zones in case of failure. * Used a t2.micro VM to be cost efficient. * Added autoscaling groups. * Complete migration of data from SQLite to AWS RDS. | | |
| Technologies | AWS RDS (Relational Database Service), PyMYSQL- Python | | |
| Tools | Spyder, Thonny, Sqlectron, QT designer | | |

**Project 2:**

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| Project Name | **Machine vision database website using React and Spring as backend** | Team Size | 1 person |
| Description | Database Website creation where the user can login and check the log of various use cases and safely logout. | | |
| Role & Contribution | Role: Software Engineer / Cloud Practitioner  Contribution:   * The database from the AWS RDS to be displayed on a webpage. * Connection to the RDS by using JWT on Spring boot. * React as the front end for the User Interface. * Postman to view and manage API. * The database for every use case can be viewed for different dates by clicking on various hyperlinks on the calendar. * Users can shift from dark mode to light mode, they change themes. * Login verification and validation is done by adding the User to AWS RDS. | | |
| Technologies | AWS-RDS, Spring, React, Postman. | | |
| Tools | Visual Studio Code, Spring boot, Sqlectron, Postman. | | |

**Project 3:**

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| Project Name | **Deployment of Deep Learning Models on AWS using Docker** | Team Size | 1 person |
| Description | A flask application which enables the user to upload a video and in return the user will receive a video with objects detected in the video. The application was then containerized and then stored onto an AWS repository such as Elastic Container Registry and deployed on Elastic Container Service. | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * A Flask application/webpage was created that allows the detection of contents on the PCB image or video that is that is uploaded by the user. * An API for the detection of PCB components was created using FLASK app and JS. * The Flask application is then containerized using docker. * The Docker container is then uploaded to an ECR and deployed on the ECS on AWS. | | |
| Technologies | Flask, Python, Docker, AWS CLI, ECR, ECS | | |
| Tools | Ubuntu, Spyder | | |

**Project 4:**

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| Project Name | **Color Identification using Image Processing** | Team Size | 2 people |
| Description | This is a color identification system using python’s web colors package to identify various range of colors accurately. | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * The image or video is fed to the solution and various ranges of color available of the frames will be displayed. * The ranges of the colors are then displayed in the form of a pie chart. * The pie chart represents the percentage of colors available of the frames. * This has been tested on various lighting conditions. | | |
| Technologies | Image processing, Computer Vision | | |
| Tools | Spyder | | |

**Project 5:**

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| Project Name | **Containerization of Tflite Inferences for Renesas** | Team Size | 5 people |
| Description | The tflite models of various use cases were inferenced on Jupyter and then the environment was containerized into Docker containers. | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * The environment of the models was mounted. * The necessary libraries, packages and dependencies were added to the requirements folder. * A Docker file with instructions was created. * The Docker file was made to build docker images. * The docker image was run to create a docker container. | | |
| Technologies | Python, OpenCV, NumPy, Docker, Ubuntu | | |
| Tools | Ubuntu on Windows SSL-2, Docker CLI on Linux, Spyder | | |

**Project 6:**

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| Project Name | **Worker Safety Solution** | Team Size | 3 people |
| Description | Using Yolov4 to train the model to identify the following items at a site under construction: A person, with and without helmet, vest. | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * Data mining * Data augmentation * Model training * Model testing on CPU | | |
| Technologies | Python, OpenCV, NumPy, CUDA | | |
| Tools | Spyder | | |

**Project 7:**

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| Project Name | **GUI using TouchGFX for an STM32 microcontroller** | Team Size | 1 person |
| Description | Created a GUI for an STM32 microcontroller. | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * Design of UI * Login Page and Validation for English and Chinese Characters. * Keyboard for User Login with English and Chinese Characters * 6 events * 100+ Scroll List * Dashboard * Slide Menu * Notification event * Database with 1000 resources * Scrollable Container with user details * Multiple buttons, layouts, and screens | | |
| Technologies | C++ | | |
| Tools | TouchGFX Designer-4.19.1  STM32CubeProgrammer- STM32CubePrg-W64 (version 2.11.0)  STM32 ST-LINK utility (version 4.6.0)  STM32CubeIDE (version 1.9.0) | | |

**Project 8:**

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| Project Name | **GUI using Embedded Wizard for an STM32 microcontroller** | Team Size | 1 person |
| Description | Created a GUI for an STM32 microcontroller. | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * Design of UI * Login Page and Validation for English and Chinese Characters. * Keyboard for User Login with English and Chinese Characters * 6 events * 100+ Scroll List * Dashboard * Slide Menu * Notification event * Database with 1000 resources * Scrollable Container with user details * Multiple buttons, layouts, and screens | | |
| Technologies | Chora | | |
| Tools | Embedded Wizard Studio | | |

**Project 11:**

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| Project Name | **OCR on Mechanical Drawings for Tenneco** | Team Size | 3 people |
| Description | To get the dimension from a mechanical drawing to an Excel.  Semi-automation has been achieved, working on full automation. | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * Code for selecting Region of Interest (ROI) * Pre-processing such as noise removal, enhancement of text and auto rotation of selected text if text is vertical or in a diagonal position. * Creating a UI to select ROI and to store the data. * Code automation to store data to an excel. * Test Plan documentation | | |
| Technologies | Python, EasyOCR, PyTesseract, Pandas, CustomTkinter | | |
| Tools | Spyder | | |

**Project 9:**

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| Project Name | **Modbus TCP/IP protocol over SPI for Carrier** | Team Size | 3 people |
| Description | Sending packets of Modbus data over SPI | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * Modbus Table creation * Creating format for TCP/IP packets * Error Handling * Creation of Test Cases * Test Plan documentation | | |
| Technologies | Embedded C | | |
| Tools | Code Composer Studio | | |

**Project 10:**

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| Project Name | **PIRCAM Testing for Carrier** | Team Size | 4 people |
| Description | Unit testing for PIRCAM | | |
| Role & Contribution | Role: Software Engineer  Contribution:   * Programming code to STM32 board * Test Plan documentation * Unit testing * Regression testing | | |
| Technologies | Embedded C | | |
| Tools | Code Composer Studio, STM32 Cube Programmer, ATS8500 | | |