SOWMIYA MEENA SIVA SUBRAMANIAN
Phone: +65 86612276, E-mail: cssowmi1@gmail.com

EXPERIENCE

5 years - **Research Engineer, Nanyang Technological University (NTU), Singapore**. Oct'18 - ongoing
3.8 years - **Associate, Cognizant Technology Solutions, India**. Aug'14 - Apr'18

EDUCATION

Bachelor of Technology in Information Technology (First Class), Anna University, India **[2010-2014]**

SKILL SET

Programming Languages	ASP.Net, C#, PHP, Python, Dart
Python libraries	Pandas, NumPy, Matplotlib, Shapely, Geopy, GeoPandas, Seaborn, Scikit-Learn
Web Technologies	HTML, JavaScript, jQuery, JWT Authentication, API Integration
Mobile application Development	Ionic, Android studio, Flutter
Methodology	Agile, Waterfall model
Design Patterns	MVC, MVPC, MVVP, 3-Tier Architecture
Operating System	Windows, Android
Tools /DB	MSSQL, MySQL workbench, ANTS Memory profiler, TFS, GIT, Visual studio code

PROFESSIONAL DEVELOPMENT

"Python for Data Science and Machine Learning Bootcamp" (Udemy, Oct 2023) - Developed expertise in machine learning algorithms and data analysis and visualization techniques.

PROJECT PROFILE AT NTU

Project 4 **[July'2022 to Present]**

Project Title: [SingaporeWALK] Mobile App
Client: National Research Foundation, Singapore

Role: ***Research Engineer*** *Technical Platform:* ***Flutter, Firebase, VS Code, python***

Developed an Android application named SingaporeWALK, aimed at utilizing motion sensors to capture motion data and track nutrition and mental wellbeing data. This data was processed and analyzed within the app to provide users with valuable insights into their health and activity performance.

Roles and Responsibilities

- Developed the application using flutter framework on Visual Studio.
- Designed and implemented the Physical Activity Tracker feature, which seamlessly connected with wearable motion sensors via Bluetooth to capture movement data during exercise sessions.
- Implemented data processing pipelines to transform raw sensor data into valuable metrics, enabling users to visualize their progress through user-friendly charts and graphs.
- Developed the Nutrition Tracker, allowing users to monitor their dietary habits, including the consumption of healthy meals and hydration levels, thus contributing to overall well-being.
- Set up and managed the Firestore database to store and retrieve user data, including sensor

data, user profiles, and other relevant information.
- Integrated real-time geolocation data, providing users with accurate exercise route tracking, and enhancing the gamified experience of the app.
- Conducted data analysis to identify correlations between activity data, nutrition, and mental wellbeing data.
- Employed machine learning techniques to develop a predictive model that classified future users as healthy or not healthy based on the collected data.

Project 3 **[Mar'2021 to June'2022]**

Project Title: Anonymizing Driver and Passenger Data
Client: GRAB

Role: ***Research Engineer*** *Technical Platform:* ***python***

Led the implementation of data anonymization algorithms for the Grab dataset, encompassing driver, passenger, booking, and demographics information. The primary objective was to ensure data privacy while preserving the patterns inherent in the original dataset. Evaluation involved the application of various metrics to validate the effectiveness of the anonymization process.

Roles and Responsibilities

- Classified data fields based on attribute type and anonymization requirements, ensuring compliance with data privacy regulations.
- Devised Grab-specific anonymization rules and executed them to safeguard sensitive information while maintaining data utility.
- Visualized anonymization outcomes, identifying insightful outliers for further anonymization refinement.
- Enhanced data usability by integrating the Google Nearest Roads API, facilitating location-based data processing.
- Applied a range of evaluation metrics to the anonymized data, measuring key characteristics and validating the effectiveness of the anonymization process.

Project 2 **[Sept'2019 to Feb'2021]**

Project Title: Feasibility study to investigate contactless health coaching for older adults.
Client: National Research Foundation, Singapore

Role: ***Research Engineer*** *Technical Platform:* ***php, jQuery and SQL server***

Led the design and development of the "**U**berise **C**oaches for **He**alth **S**ervices and **K**nowledge (**UCHESK**)" system. UCHESK is an innovative ecosystem that revolutionizes caregiving services by coordinating and efficiently managing just-in-time, bite-sized caregiving services training. This approach ensures affordable and effective health coaching, empowering the elderly to proactively manage chronic conditions and enhance their quality of life.

Roles and Responsibilities

- Actively involved in the development of the UCHESK system, utilizing PHP, jQuery, and SQL Server for the web platform and the Ionic framework for mobile app development on both Android and iOS. Implemented features and functionalities based on the project requirements.
- Implemented data management solutions using SQL Server, ensuring that user data, caregiving service information, and health coaching data were securely stored and easily accessible.
- Collaborated closely with team members, including UI/UX designers, researchers, and other developers, to ensure seamless integration of design and functionality. Engaged in regular team meetings to track progress and address any challenges.
- Assisted in developing training materials and provided guidance to end-users, including older adults, on how to use the UCHESK system effectively.

- Conducted usability testing with older adults to gather feedback and insights for further refinements to the application's user interface and functionality.
- Utilized collected data to perform initial analytics and insights generation, which could potentially inform future enhancements or research findings.

Project 1 **[Oct'2018 to Aug'2019]**

Project Title: HOmecare and **CA**regiving **M**odel for **O**ptimising **S**ervices for the **E**lderly (**HOCAMOSE**)

Client: MOH (Ministry of Health), Singapore

Role: ***Research Engineer*** *Technical Platform:* ***php, python and SQL server***

The HOCAMOSE project aimed at creating a prototype that addresses the complex challenges of homecare and caregiving services for the elderly. The project leveraged a deep understanding of human issues, including the needs, behaviors, and social support of homecare recipients, to deliver a comprehensive system comprising five distinct services.

S1 – General Health Visit
S2 – Meal Planning and Delivery
S3 – Medication Adherence and Delivery
S4 – Digital Fitness Games
S5 – Smart Home Sensors

Roles and Responsibilities

- Assumed primary responsibility for the "Smart Home Sensors" service (S5). Designed and developed a user-friendly web application, streamlining access to the service for center managers and professional care providers. The application encapsulated intricate technical details while ensuring ease of use.
- Conducted extensive data analysis on sensor data collected within the HOCAMOSE system. Employed Python and SQL Server to process and extract valuable insights related to the health and well-being of elderly recipients.
- Utilized data analysis outcomes to derive meaningful observations regarding the health and living conditions of elderly individuals. These insights played a pivotal role in shaping caregiving services.
- Produced diverse reports leveraging data visualization tools such as amCharts. These reports conveyed data-driven trends and patterns, facilitating informed decision-making and personalized care planning.

PROJECT PROFILE AT COGNIZANT

Project 1: Client central **[Jan'2015 to Apr'2018]**

Client: BB&T (Branch Banking and Trust) Bank, USA

Role: ***Software Developer*** *Technical Platform:* ***C# .Net WPF, MVPC pattern***

Contributed to the development of Client Central, a critical Windows application utilized by branch employees of BB&T Bank to deliver world-class banking services to customers. The application supports a wide range of operations, including account opening for retail and business products, as well as ongoing account servicing.

Roles and Responsibilities

- Implemented major enhancements to improve application functionality.
- Addressed QA, UAT, and production clarifications promptly.
- Conducted quality assurance activities, including test case execution and code reviews.
- Supported SIT, UAT, and regression testing phases.
- Organized and documented daily team meetings.

- Maintained open communication with clients through regular calls and demos.
- Successfully managed multiple concurrent projects at various phases.

NOTABLE ACHIEVEMENTS

- Published a paper at the **HICSS** (Hawaii International Conference on System Sciences) conference, focusing on the development process and insights gained from the UCHESK (Uberise Coaches for Health Services and Knowledge) app. The paper highlights valuable contributions to the field of healthcare technology and elderly care.
- Got Appreciation from BB&T client, for successfully moving major enhancements to PROD with zero defect.
- Secured 1st place for the Idea provided in "IDEATHON" event conducted in BB&T.

  Idea title: "Customer Sentiment Analysis"

  Idea Description: Analyzing the customer comments or feedback provided through any medium (text or voice) and categorizing it for management references.

  Tools used: IBM Watson tool NLP (Natural Language Processing).