

SWAPNIL SURDI

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PROFESSIONAL SUMMARY

Experienced Software Engineer with over 4 years of experience in Software Development. Excellent reputation for solving problems and improving customer satisfaction through Automation.
Active Researcher in the field of Space Situational Awareness, and Space Traffic Management.
Confident Embedded Engineer with exemplary expertise in wireless communication protocols.

SKILLS

- Tools and frameworks: Python-Django-Celery-RabbitMQ, Tornado, MATLAB, Java-Spring, Cesium, WordPress, React, Tendermint, Ionic, AWS
- Languages: Python(5+), C(2+), C++(2+), JAVA(3+), SQL(3+), PHP(1+), JavaScript(3+), TypeScript(2+)
- Platforms: Windows, Mac, UNIX, LINUX
- Test Automation, Selenium
- Network Design, TCP, UDP, IP, OLSR
- Space Safety Research
- Systems Design
- Blockchain
- Consumer Electronics
- Database Design
- Wireless Networks, Mesh Networking
- GNU Radio, Software Defined Radios
- Embedded Firmware, PCB design
- Data Acquisition and Data Analysis
- CORE Emulator

WORK HISTORY

MESH NETWORK ARCHITECT | 03/2020 to Current

Beamlink Inc - Los Angeles, CA

- Gather requirements for Mesh Network and Design best suitable option for the application
- Develop Mesh network for portable cell phone towers to be used after disasters or emergencies, using Optimized Link State Routing Protocol
- Integrate mesh network development with current portable cell phone towers, allowing the towers to share internet through Mesh Network
- Automate Testing of the mesh network, and add a plug-n-play feature for Mesh network
- Simulate mesh networking in Common Open Research Emulator (CORE)
- Develop Python code for testing Network Speed, Latency and Jitter
- Configure and install wireless adapters, controllers, and routers
- Diagnose system hardware and software problems using advanced root-cause analysis.

TECHNICAL LEAD | 02/2020 to 05/2020

Freelicious App Social Venture - Los Angeles, CA

- Designed basic framework and skeleton for the application in Ionic, to be used by other developers to build more features and customize the design according to the requirements
- Lead two teams of developers to design the application, coordinated, planned their tasks and updated the stakeholders about the development

STUDENT GRADER | 08/2019 to 05/2020

USC Astronautical Engineering Department - Los Angeles, CA

- Assisted Teaching Assistant and the Professor in grading the homework for the courses Spacecraft System Design and Foundations of Astronautics.

TECHNOLOGY SPECIALIST | 03/2019 to 05/2020

USC Marshall Center for Global Supply Chain Management - Los Angeles, CA

- Maintain and update the WordPress website content
- Maintain, and update any server requirements on AWS, Dreamhost
- Handle presentations during events

SOFTWARE DEVELOPER | 09/2018 to 05/2020

Open Sesame Game for Social Ties' Study - Los Angeles, CA

- Collected Requirements and Designed architecture for the application
- Developed RESTful APIs to be used by front-end
- Developed the main server code from scratch
- Improved server speed by increasing code efficient, resulted in serving 20% more users in given time

EMBEDDED SYSTEMS ENGINEER | 09/2018 to 03/2019

Liquid Propulsion Laboratory - Los Angeles, CA

- Worked on Hydra Test Stand, to test various injectors
- Designed Data Acquisition & Control System for an Igniter of a rocket engine. The system was designed to use Wireless channels to transfer data
- Collaborated with software, firmware, and hardware engineers to develop a complete embedded solution

APPLICATION DEVELOPER | 10/2016 to 06/2018

Apprely Technologies

- Maintain and improve Android project code for projects - Sahyadri Treks App, Care Turtle App.
- Optimized GPS battery for Android Devices, and potential use of Indian Regional Navigation Satellite System
- Completed agile development for Python Tornado and Django servers for Entryless, a US-based bill-pay Automation Solution Company
- Integrated Quickbooks APIs with Entryless, to push and pull customer data

ASSOCIATE SOFTWARE ENGINEER | 10/2015 to 10/2016

Accenture Services Pvt Ltd - Pune

- Collaborated with team to automate testing of the website for Virgin Media UK.
- Received Ace Award for critical automation, saving over 2 months of man-hours for the client

RESEARCH

LEAD AUTHOR

Space Situational Awareness through Blockchain Technology

- Proposed a system that will use blockchain technology for Space Situational Awareness and Space Traffic Management
- Presented the paper at the First International Orbital Debris Conference, in Houston
- The paper was published in the Journal of Space Safety Engineering volume 7, issue 3.

DIRECTED RESEARCH

Decentralized Search Engine for Decentralized Data Marketplace

- Continued work on Decentralized data marketplace, and proposed a decentralized search engine for the marketplace
- Completed the proof of concept of search engine, using Interplanetary File System.
- Proposed engine was open so that anyone could use it, and yet it was private so that user's personal queries and preferences could not be tracked.

CO-AUTHOR

Preliminary Safety Assessment of Candidate Strato-Fly Vehicle Configurations

- A preliminary safety analysis of LAPCAT MR2.4 of the Strato-Fly project, was presented to fully characterize the overall risk
- Studied effects of Orbital Debris on various components of the vehicle
- Proposed safety precautions for the vehicle at different stages of operation

ACADEMIC PROJECT | TEAM LEAD

Intelligent Toolbox for 20-sim

- Lead a team of 2 to construct a conveyor belt for sorting simple shape objects
- Controlled the belt using 20-sim, by writing programs in C
- Studied and implemented neural network algorithms – Backpropagation and Self-Organizing Map
- Wrote programs in MATLAB and tested them for sorting objects using images. Converted the program in C for the 20-sim software.

EDUCATION

University of Southern California - Los Angeles, CA | Master of Science

Astronautical Engineering, 05/2020

- Graduated with a 3.5 GPA
- Member of Viterbi Graduate Student Association and Liquid Propulsion Laboratory

- Coursework in Safety of Space Operations, Ground Communication, Wireless Networks, Spacecraft System Design, Spacecraft Propulsion, Orbital Mechanics, Space Environments and Spacecraft Interactions

Maharashtra Institute of Technology, University of Pune | Bachelor of Engineering

Electronics & Telecommunication Engineering, 05/2015

- Graduated with a 3.5 GPA

CERTIFICATIONS

Certified - Lean Six Sigma Green Belt from USC Marshall Center for Global Supply Chain Management