

# ARABHI SUBHASH (IIT, Madras Computer Science)

## SOFTWARE ENGINEER | FRONT-END & BACK-END DEVELOPMENT

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### # PROFILE SYNOPSIS

**Results-oriented Software Engineer** with 2 years of experience in contributing to the full software development lifecycle.

**Demonstrated ability to identify, analyze, and resolve complex software issues** across diverse platforms and technologies.

**Adept in implementing Agile methodologies** to streamline project workflows.

**Strong knowledge of project management and customer relations**, with a passion for building innovative and cutting-edge software.

### # CAREER ACHIEVEMENTS

**All India Rank 166** in JEE ADVANCED | 2017

**All India Rank 700** in Paper-1 and 11 in Paper-2 of JEE MAINS | 2017

**Top 1%** in NSEP | 2016 – 2017

**Membership in KVPY** | Indian Institute of Sciences, Bangalore | 2015 – 2016

**Scholarship in NTSE** | 2015 – 2021

### # SKILL SET

Software Development Life Cycle | Full-stack Development | Web Application Frameworks | UI & UX | Version Control | Requirements Analysis | Network Security Projects | Testing & Debugging

### # TECHNICAL SKILLS

**Languages:** C, C#, C++, Python, JAVA (OOPS), JS, OCaml

**Tools:** MySQL, Git, Android Studio, Visual Studio, Azure cloud

**Libraries & Frameworks:** React, Angular.js, .Net, Agile

### # ACADEMIC CREDENTIALS

- B.Tech** | Computer Science & Engineering | IIT Madras | 8.0 (7.92) CGPA | 2021
- XII** | MPC | 95.67%
- X** | 9.8

### # PROFESSIONAL EXPERIENCE

**Software Engineer** | Microsoft | Jul'21 – Jun'23

- Engineered a webpack 5 package from scratch, enabling seamless family-sharing options across various M365 applications. Demonstrated exceptional leadership as Scrum Master/**Acting Team Lead for 4 sprints**.
- Enhanced family onboarding experience at a core level using Windows OOBE (Out of Box Experience) which significantly **increased** the user base from **8 to 15 million**.
- Led backend (C#) and frontend (React, JavaScript) development for family safety and connectivity applications in M365 suite, which involved migration of Angular MS family web pages to React.
- Implemented parental controls, including time limits for games, browsers, and applications, on MS Windows and Xbox platforms.

**Software Development Engineer Intern** | Flipkart Internet Pvt Ltd. | May'20 – Jul'20

- Developed and implemented Quiz-type features into the Flipkart Surveys system while ensuring backward compatibility and reusability.
- Designed and integrated a user-friendly interface (UI) for clients, simplifying the survey creation.

**Winter Product Development Intern** | COS-X Business Solutions Pvt Ltd. | Dec'19 – Jan'19

- Enhanced the company's Hiring Platform by integrating cutting-edge features including Speech-to-Text, Resume Redaction, and Face Recognition.
- Developed robust APIs for voice identification by implementing advanced techniques such as Gaussian mixture models and frequency extraction.

### # PROJECTS HANDLED

**Linear Bandits Research Project** with Prof. Arun Rajkumar

- Data transfer systems have encoding for reliability. I tried to solve the problem of encoder selection to get the best of memory efficiency and reliability using Linear Bandits.
- Awarded the **Samsung Pravartak Fellowship** for outstanding work in physical systems.

**Operating Systems** with Prof. Pratyush Kumar

- Implemented waitpid functionality in xv6 OS. Executed Scheduling Algorithms (FCFS, SJF, RR), and solved Dining Philosophers synchronization problem

**Artificial Intelligence** with Prof. Deepak Khemani

- Developed an AI-based Othello board game bot utilizing search tree algorithms like min-max and alpha-beta pruning, showcasing strategic gameplay.
- Implemented genetic AI algorithms to solve TSP (Traveling Salesman Problem) in non-exponential times.

**Machine Learning** with Prof. Hema A. Murthy

- Classified sequential data from handwritten Telugu letters & audio numbers using Hidden Markov Models. Built K-Nearest Neighbour, Multi-Class Logistic Regression, Polynomial & Gaussian Kernels SVM classifiers.

**Deep Learning** with Prof. C. Chandra Sekhar

- Studied GoogleNet and VGGNet architectures and created custom Convolution networks with NetVlad architecture, Image captioning with Recurrent Neural Networks using PyTorch.

**Reinforcement Learning** with Prof. Balaraman Ravindran

- Implemented Epsilon Greedy, Softmax, UCB, Median Elimination algorithms on a 10-arm bandit testbed. Created a custom environment using OpenAI gym, implemented SARSA, Policy Gradient.
- Solved Hallway environment using Q-learning and **OpenAI gym** Cart-pole environment using DQN.

### Other Projects:

- Compiler Design:** Built MacroJava compiler (Parsing, Type Checking, SDT, IR Generation). Implemented Graph Coloring (register allocation), control flow analysis, and basic block optimizations
- Database Management:** Conducted data modelling for smaller versions of popular databases such as IMDB, Student Management, and Employee Management.
- Computer Networks:** Implemented Go Back-N, and Selective Repeat protocols for reliable data transfer. Constructed custom UDP, TCP, and ICMP packets using Scapy, imitating DNS Server.
- Cache simulator:** Developed Cache simulator, managed memory replacement policies (LRU), write-back, and write-through design choices to get better understanding of computer architecture.
- NLP Project:** Developed a Vector Space Information Retrieval system, enhancing precision by twofold compared to regular systems, using concepts like LSI and ESA.