Abhishek Soundalgekar

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EDUCATION

University of Southern California, *Masters in Computer Science* | Los Angeles, California — Jan 2025 – Dec 2026

Pune Institute of Computer Technology, *Bachelors in Computer Science* | Pune, India — June 2020 – July 2024

Courses at USC: Analysis of Algorithms | Foundations of Artificial Intelligence | Machine Learning for Data Science

EXPERIENCE

USC, *IT Services Student Worker* **| On-Campus (LA, California, USA)** — May 2025 – Present

- Implemented 3D models and ROS joints controlled through Q-Learning, running on AKD1000 chip.
- Accelerated development by 40%, delivering a fully functional AI-controlled robot from scratch.
- Engineered the transition of neural-network designs from TensorFlow to BrainChip's MetaTF framework.

Sarvatra Technologies Private Limited, *Software Developer Intern* **| Pune, India** — Aug 2023 – Jun 2024

- Built a National Financial Switch simulator for UPI, integrating RSA encryption for secure transactions.
- Improved transaction throughput by 30% through optimized microservice design in Flask and FastAPI.
- Designed CI/CD pipelines with Docker and GitHub Actions, reducing deployment time by 50%.

AlgoAnalytics Private Limited, *Data Scientist* **| Pune, India** — Aug 2023 – Dec 2023

- Sentiment analysis on live financial news with SVM, MLP, Naive Bayes & Decision Trees, achieving 92% accuracy.
- Extracted key stock-related entities via NER and sequence labeling, boosting pipeline accuracy by 18%.
- Automated end-to-end data ingestion and feature engineering in Python, reducing model training time by 35%.

Suvidha Foundation (Non-Profit), *Machine Learning Intern* **| Pune, India** — Sep 2023 – Nov 2023

- Developed an attention-mechanism bridge in encoder–decoder models, reducing compute overhead by 40%.
- Automated Python data-preprocessing pipelines, slashing dataset prep time by 60%.
- Built and fine-tuned custom CNN architectures for sequence transduction, improving validation accuracy by 8%.

Huf India Private Limited, *Full-stack Developer Intern* **| Pune, India** — Jul 2022 – Dec 2022

- Led front-end coordination for Industry 4.0 project - set up Git, Figma & designed ReactJS UI for multi-user UX.
- Integrated Node.js REST APIs to surface real-time IoT sensor data in React dashboards.
- Authored Jest & Cypress tests covering 85% of code, improving stability and speeding up QA cycles.

University of Limerick, *Research Intern* **| Remote, India** — Jun 2022 – Nov 2022

- ML models to predict research outcomes; used heat maps & regression to boost feature-selection accuracy by 15%.
- Conducted exploratory analysis on 50 GB of sensor & survey data, uncovering three novel success predictors.
- Packaged models as Flask REST endpoints, enabling non-technical users to run predictions via a simple web form.

SKILLS & ACHIEVEMENTS

Programming Languages	C++, Python, Java, JavaScript, MATLAB, SQL, Swift, Kotlin, LaTeX
Web & Software Development	Django, Flask, React.js, Node.js, HTML/CSS, JavaScript, Git
Tools & DevOps	Docker, Tableau, SSH, Linux, AutoCAD
Achievements	Solved 500+ problems on GeekforGeeks, Institute Rank 1 among all students at USC.
LeetCode	Unlocked 20+ badges, solved 500+ problems on LeetCode and secured Institute Rank 1.
Coder Ratings (as of 07/24/2025)	Achieved 5 stars on HackerEarth and maintained 4 stars on Codeforces.

PROJECTS

WorkLens | PICT - SIG | HTML, CSS, JavaScript, Django, Node.js, Kotlin — Nov 2023

- Under the Government of Punjab's SIH, developed web and Android applications to provide employment data.
- Implemented job notifications based on geospatial coordinates for real-time job access.
- Built an AR navigation feature displaying company and job details via smartphone camera and map.

Analysis of Algorithms Final Project | CSCI-570, USC | C++, Python, NumPy, Matplotlib — Spring 2025

- Enhanced classic DP sequence alignment algorithm with gap penalty =30 and -matrix mismatch costs, validating against 100+ sequence pairs (up to 20 kbp) with 100% accuracy and an average runtime of 0.08 s per alignment.
- Designed a memory-optimized DP variant that lowered space requirements from O(mn) to O(n), successfully aligning sequences up to 20 000 bases while cutting peak memory usage by 70% without sacrificing alignment accuracy.
- Automated performance benchmarking across 10 dataset sizes (1 Kb–20 Kb), generated time vs. size and memory vs. size plots, and demonstrated a 60% average memory reduction while maintaining O(mn) runtime complexity.

Foundations of AI Mega-Project | CSCI-561, USC | C++, Python, TensorFlow, OpenAI Gym — Spring 2025

- Leveraged genetic algorithms for a 3D TSP, achieving 98.35% optimality across three homeworks in a cohort of 188.
- Developed search agents for 5×5 Go and Pac-Man, ranking top in class-wide AI tournaments v/s baselines.
- Implemented a Viterbi-based partially observable Markov decision process inference engine, decoding hidden states over 20-step sequences in 50+ simulation runs with 100% accuracy and an average inference time of <10 ms/step