

Nalin Wadhwa

Portfolio: nalinwadhwa02.github.io

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EDUCATION

- Indian Institute of Technology** Delhi
 - Bachelor of Technology - Computer Science and Engineering; GPA: 8.00/10* July 2019 - June 2023
 - Courses:** Programming Languages, Computer Architecture, Signals And Systems, Data Structures And Algorithms, Digital Logic System Design, Adv. Topics In Embedded Comp., Computer Networks, Principles Of Artificial Int., Intro. To Parallel Dis. Pro., Operating Systems, Natural Language Processing, Compiler Design, Spl. Topics. in ML

SKILLS SUMMARY

- Languages:** Python, C++, C, SML, Bash, Java, OCaml, Haskell, Latex
- Frameworks:** PyTorch, NLTK, Transformers, Keras, Flask, OpenMP, MPI

EXPERIENCE

- Microsoft** Remote
 - Data & Applied Research Intern(Full-time)* June 2022 - July 2022
 - Code Summarization for Bing Code Answers:** Showed proof of concept for using Code Summarization to get descriptions of code snippets from Bing search results in dev queries and comparing descriptions back with query to rank results and improve search results.
 - Results:** Improved state of the art models for Code Summarization for application from 60% to 75% using data mixing as well as implementing custom filters to eliminate biases & showed possible implementation in Bing Search Engine.
 - Post Completion:** Received Letter of Recommendation and a Pre Placement Offer for diligence and efforts.
- Nvoi** Remote
 - Lead Software Engineering Intern (Full Time)* Apr 2022 - May 2022
 - Online Platform:** Created a Online platform for Web3 Games over the cosmos multi-chain ecosystem. Worked primarily on building the server and Web3 Games.
 - Management:** Managed 2 other Software development interns by giving work, taking assignments and leading them to their respective responsibilities. Involved in architecture and planning of most of initial Nvoi company infrastructure and initial games and NFT drop plans.
 - Post Completion:** Received a Letter of Recommendation from the Co-Founder for diligence and efforts.
- eJET Systems Pvt Ltd** Remote
 - Project Sona.AI : Data Scientist Intern* Dec 2020 - Feb 2021
 - Resume Classification:** Designed a Resume Classification model to match sequential experience of candidates with given job openings. Received 89% accuracy using Bi-RNN's over the cross validation set.
 - Non-Verbal Facial Queue Detection:** Deployed a model to track Non-Verbal Facial Queues in Video Resumes to find the Big 5 Personality traits. Got 82% accuracy using Deep CNN's over Cross Validation Set.
 - Post Completion:** Received a Letter of Recommendation from the HR manager for diligence and efforts

PROJECTS

- Program Synthesis for Vectorized array functions (Advisor: Prof Sorav Bansal) (C, Systems):** (Work in progress) Using x86 Intrinsics, built a layer of highly optimized vector operation code blocks to form a layer of abstraction over assembly. Implemented Glibc functions and make an auto vectorizer using the vectorized code blocks.
- HOH OS Development - Building an toy operating system (Advisor: Prof Sorav Bansal) (C):** Designed initial bootup a kernel level terminal, with keyboard and display drivers. Implemented Stackless couroutines and fibers for preemption and scheduling, seperate timer and interrupt mechanism for preemption.
- Sentiment Analysis for Context separation in words (Advisor: Prof Mausam) (Deep recurrent networks,NLP):** Wrote an attention only encoder decoder model that separates same word used in different context in different sentences. Got 78% accuracy on training set and 68% on final test set (2nd in course).
- Linux Kernel Driver Development (Advisor: Prof Kolin Paul):** Implemented a linux kernel driver which returns a random name and plays a dice game. Booted an ARM Chip from scratch and wrote drivers to take input from keyboard.
- Turing Complete Language (Advisor: Prof. S.Arun Kumar and Prof. Subodh Sharma) (Feb, 2021 - Apr, 2021):** Designed a compiler for a Turing complete functional language in SML-NJ with support for recursion, higher-order functions and type-inferencing system using EBNF notations, ML-Lex as a lexer and ML-Yacc for parsing.
- nwDE (Nalin Wadhwa's Desktop Environment) (Independent project):** Created a set of essential minimal terminal-based linux desktop applications inspired by the suckless community. Comprised of a terminal file manager: TerminalOpen written in C++, a minimal Tiling window manager nwTWM made with Xlib, C++ and an early-phase keyboard-driven web browser using qt5-webkit.

POSITIONS OF RESPONSIBILITY

- Coordinator, Game Dev Club (May 2022, June 2023):** Planned and interviewed executives for the club, also assigned projects, overlooked progress for each member of the club and held events for teaching sessions for new members.
- Aquatics Vice-Captain, Kumaon Hostel (September, 2020 - March, 2021):** Played as the goalkeeper in the Inter-Hostel Water Polo Tournament and got selected in the Inter-IIT Water Polo Team.
- Head Volunteer, Office of Career Services (July, 2021 - May, 2022):** Coordinated with multiple companies and students to set up interviews and represented students sitting for placements to companies.