Chirag Sarda
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EDUCATION

Degree	Specialization	Institute	Year	CPI/%
B.Tech.	*Computer Science & Engineering*	IIT Gandhinagar	2020-Present	9.01
HSC CBSE	*Physics, Chemistry, & Mathematics*	Bright India Public School	2020	94.2%
SSC CBSE	-	M.S.S Public School	2018	93.2%

INTERNSHIP EXPERIENCE

- **MathWorks India Private Ltd.** *[Software Development Intern]*   *May-Jul 2023*
  - Enhanced export functionality for **Functional Mockup Units (FMU)** units, transitioning from **FMI 2.0 to FMI 3.0** standards, ensuring compatibility with the latest industry requirements.
  - Successfully integrated log messaging capabilities, streamlining the export process of standalone FMUs within the **Simulink** environment. This improvement contributed to smoother operations and better tracking of activities.
  - Collaborated with the Quality Engineering team to write unit tests, using **MATLAB** for various features, enhancing software quality and functionality.

- **Exprto** *[JEE Mentor]*   *Oct 2021-Mar 2023*
  - Exprto is a platform that connects JEE or NEET aspirants to their respective rankers.
  - Guided numerous **JEE aspirants** to success by offering effective strategies and techniques tailored to their learning needs.
  - Specialized in **Mathematics** and shared my expertise and knowledge to help students grasp complex concepts, fostering their confidence and skills.

PROJECTS

- **Movie Recommendation Systems** *[Course: Datascience]*   *Mar-Apr 2023*
  - **Led the team of three** in building a comprehensive movie recommendation system with diverse algorithms like **Top-N, Content-based, Collaborative, Hybrid** on **MovieLens 100K dataset**
  - Optimized **vectorization** using **one-hot encoded genres**, boosting accuracy by **15%**
  - Showcased **Pearson's coefficient** superiority over cosine similarity in **KNN** and explored **DNN-based models** to capture **intricate user-item relationships** for improved recommendations.

- **Karma Programming Language** *[Course: Compiler]*   *Jan-Apr 2023*
  - **Coordinated in a team of 5 members** to develop a complete language compiler and debugger from scratch using **Abstract Syntax Tree(AST)** and **Bytecode**, implemented in **Python**.
  - Designed and implemented a interactive Karma Playground using **Streamlit**, enabling seamless code writing, execution, and management.
  - Achieved execution of **Euler 14** problem for input size 10^5 under **5 minutes** and other 5 Euler problems requiring **datatypes, variable declaration, conditionals, loops, and data structures**.

- **IndiaEconHistory** *[Course: Datascience]*   *Apr 2023*
  - Conducted **Exploratory Data Analysis(EDA)** on India's economic history, analyzing sector-wise GDP, exchange rates, foreign trade, and payment systems, revealing India's economic evolution.
  - Provided an overview of India's economic transformation, emphasizing policy decisions in driving **growth** and **stability**. Offered insights for future policy decisions, emphasizing learning from the **past** and **present** for **sustainable growth**.

- **Neural Network Simulation Playground** *[Course: Machine Learning]*   *July 2023*
  - Developed an interactive **Neural Network Simulation Playground**, empowering users to customize input datasets, select **basis** functions, and adjust critical parameters like l**earning rate, hidden layers, neuron count, and epochs** for dynamic model experimentation.
  - Implemented an intuitive user interface allowing easy configuration of dropout rates and the inclusion of a Monte Carlo dropout layer, enhancing model flexibility and robustness.

- ○ Utilized the playground to generate contour plots, providing users with visual insights into dataset characteristics and the neural network's performance.
- **Neev IITGN webisite** [*Course: Databases*] *Mar-Apr 2023*
  - ○ **Led a team of 11 members** in developing Neev organization's website. Designed and implemented the backend using **MySQL and Python Flask** while utilizing **Bootstrap, HTML, CSS, and JavaScript** for frontend development. Contributed to both frontend and backend to ensure a cohesive user experience.
  - ○ Designed the **relational database** with constraints to optimize data management and security. Integrated robust user authentication to safeguard sensitive information and control user access.
  - ○ Engaged with stakeholders to gather requirements and align website functionalities with Neev's community outreach objectives.
- **Assembler and Disassembler** [*Course: Computer Organization and Architecture*] *Mar-Apr 2022*
  - ○ **Collaborated with a 4-member team** to create a **MIPS 32** Assembler and Disassembler using **Python**, enabling seamless conversion between assembly code and hexadecimal machine language.
  - ○ Specialized in developing the **Disassembler** component with a user-friendly GUI developed using **Tkinter**, facilitating the conversion of machine language back to assembly code
- **KBC Game** [*Summer Project*] *Jun 2022*
  - ○ Designed a KBC game replica using **Streamlit**, featuring lifelines like **"Audience Poll," "Power Paplu,"** and others, highlighting technical and creative skills.
  - ○ Utilized **Python** programming skills to implement the game logic, including question generation, answer validation, and scoring, ensuring an authentic KBC gameplay experience.

POSITION OF RESPONSIBILITY

- **Organising Team Member** [*Nyasa IITGN*] *Jun 2023- Present*
  - ○ Served as a dedicated team member for Nyasa, an NGO run by students at IITGN, actively involved in providing education and support to the children of migrant construction workers in the campus vicinity.
  - ○ Currently collaborating with Palaj government school, focusing on preparing students for the Novodhya paper while enhancing their cognitive and mental capabilities through teaching.
- **B.Tech 20 Senator** [*IIT Gandhinagar*] *Apr 2022-Apr 2023*
  - ○ As a B.Tech'20 Senator at IIT Gandhinagar, I represented fellow students, addressing concerns and improving the academic and social environment.Collaborated with Senators to organize events that promoted student well-being and community building.
  - ○ Gained insights into democratic institutions, emphasizing the importance of impactful representation and community betterment.
- **Design Executive** [*Blithchron 22*] *Aug 2021-Mar 2022*
  - ○ As a Design Executive for Blithchron, the annual cultural festival of IITGN, I played a key role in the design and execution of marketing materials for the event.
  - ○ Working as part of a 15-person team, I used my skills in Adobe Illustrator to design eye-catching banners and social media posts that effectively promoted the festival to a broader audience. .
- **Peer Assistant Learning (PAL) Mentor** [*IIT Gandhinagar*] *Jan -Mar 2022, 23*
  - ○ As a PAL mentor, I facilitated interactions between senior and freshman students to help the latter adapt to English as the primary mode of instruction.
  - ○ Guided and Supported to first-year undergraduate students, conducting group sessions and one-on-one meetings, and creating a supportive and inclusive learning environment.

ACHIEVEMENTS

- Secured an **All India Rank of 2160 in JEE Advanced 2020 out of 1,50,838 candidates**
- **Dean's List Felicitation**: Recognition for Academic Excellence in the **semester 2, 3, 4 and 6** at IITGN
- An **opener** of the **Electrical Engineering** branch at IIT Gandhinagar in 2020.
- Secured **1st place** in the **IPL Fantasy League 21** conducted by the EII cell of the IITGN

TECHNICAL SKILLS

- **Languages:** C, C++, Python, SQL, HTML, CSS, JavaScript, Verilog
- **Libraries and Framework:** Python (NumPy, Pandas, Scikit-Learn, PyTorch, Flask, Streamlit, Tkinter)
- **Tools:** Linux, MATLAB, Git, Simulink, Adobe Illustrator, Vivado, Autodesk Inventor