

Sagalpreet Singh

Predoctoral Researcher, Google Deepmind
Graduated with B.Tech. in May 2023

+91-98xxx-xxxxxx
sagalpreet60@gmail.com
Github | Website

EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage
B.Tech. (CS Major)	Indian Institute of Technology Ropar	9.31/10
B.Tech. (AI Concentration)	Indian Institute of Technology Ropar	10/10

SCHOLASTIC ACHIEVEMENTS & AWARDS

- **Google Travel Grant** of USD 2000 for presenting my research at AAMAS '23
- **Microsoft Travel Grant** of INR 120,000 for presenting my research at AAMAS '23
- Selected for **Amazon ML Summer School** and was offered **Applied Scientist internship**
- **Institute Merit Scholarship** at IIT Ropar for exceptional academic performance
- **Best B.Tech. Project Award** at IIT Ropar on the National Technology Day
- **NTSE Scholarship** by the Government of India, given to the top 1000 students nationwide
- **All India Rank 1108** in IIT JEE-Advanced and **99.8 percentile** in JEE-Main out of 935,000 candidates
- **National top 1%** in NSEP 2019 conducted by IAPT
- **State top 1%** in NSEJS 2017 conducted by IAPT

PUBLICATIONS

- **AAMAS'23: On Subset Selection of Multiple Humans To Improve Human-AI Team Accuracy**
Sagalpreet Singh, Shweta Jain and Shashi Shekhar Jha Website
– Presented an approach to merge the predicted labels from multiple humans with the model's probabilistic output
– Accepted as a full paper in AAMAS 2023

WORK EXPERIENCE

- **Google Deepmind** *Aug 2024 - Present*
Predctoral Researcher - Agent Quality and Understanding Algorithms Bengaluru, India
- **Oracle Cloud Infrastructure** *Jun 2023 - Aug 2024*
Member Technical Staff - OCI AI Speech Bengaluru, India
 - Led the Natural TTS voice feature from ideation to production ready stage - [Blog](#)
 - Designed and implemented the API layer for Whisper ASR model - [Blog](#)
 - Led E2E implementation and testing of delete workflow for async transcription jobs - [API](#)
- **Chegg India** *May 2022 - May 2023*
Subject Matter Expert Remote
 - Helped students with their doubts in DBMS, OS and other core CS topics
- **Oracle Cloud Infrastructure** *Jun 2022 - Jul 2022*
Project Intern - Server Technology Bengaluru, India
 - Developed circuit breaker to handle the noisy neighbor problem in the email notification microservice that is used more than 1 million times a day
 - Enhanced notification architecture by adding API endpoints to support sending emails using customer tenancy. Check "Bring your own Email Server" section in this [blog](#)
- **IPSA Lab** *Jan 2022 - May 2022*
Department Engineering Project India
 - Worked on SAMPAN Android App (Flutter) used by 1200+ of Anganwadi workers in India to log 50000+ data instances every month
 - Designed, developed and deployed dashboard on IIT Ropar servers for data analytics
 - Featured in [The Tribune](#)
 - [Play Store Link](#), [Product Demo Link](#)

KEY PROJECTS

- **Diffusion Models for Audios** Aug 2022 - May 2023
Dr. Abhinav Dhall Report
 - Proposed two novel diffusion model frameworks for audio generation: the cross-diffusion and the double diffusion
 - Cross-diffusion technique allows for conditional generation of high-quality audio without compromising on the output quality
 - Double-diffusion technique is designed to produce an unconditional paired set of instrumental sounds for chorus generation
- **OS Components** Aug 2021 - Dec 2021
Dr. Balwinder Sodhi Github
 - Simulated 5 different services of an Operating System in C vis-à-vis dispatcher, hard-drive scheduling, memory allocation, deadlock detection, and file system
 - Experimented for different parameters to find optimal settings, such as different scheduling algorithms and different hard-drive configurations in hard-drive scheduling
- **Academic Portal** Oct 2021 - Nov 2021
Dr. Viswanath Gunturi Github
 - Developed a multi-user standalone secure database application for academic portal of an institution with multiple constraints in PostgreSQL
 - Implemented stored procedures, functions, triggers and custom data types in PL/pgSQL
- **32-bit RISC-V ISA Simulator** Feb 2021 - Apr 2021
Dr. TV Kalyan Github
 - Developed a GUI-based cross platform simulator for 32-bit RISC-V instruction set architecture in Python that supports 29 instructions including arithmetic, logical, data, and control instructions
 - Displays real-time changes that occur in the main memory, cache and registers
 - Supports pipelined execution with branch prediction and hazard detection
- **Priority Queue Performance Analysis** Nov 2020 - Dec 2020
Dr. Puneet Goyal Github
 - Analyzed the performance of different Priority Queue implementations viz-a-viz arrays, binary heaps, binomial heaps and fibonacci heaps on graphs with different sizes and edge densities in C++
 - Generated test data (sparse and dense graphs with over 1000 nodes) using Python and visualized performance by plotting graphs in Matplotlib

COMPETITIONS & RANKINGS

- Among top 20 coders across India in **Oppo Inspiration Cup**
- Rank 198 (18th in India) in **Google Hash Code**
- Rank 238 in **Google Kickstart Round-C**
- Rank 84 in **Newton's Grand Contest**
- Rank 84 in **Codegoda 2021 by Agoda**
- Rank 106 in **ACM ICPC 2020 Pune-Gwalior Region**
- Rank 7 in **Amexpert Smartathon by American Express**
- Rank 10 in **Inter-IIT Collab Competitive Programming Competition, IIT-BBS**
- Expert on **Codeforces** (username: sagalpreet)

TECHNICAL SKILLS

- **Programming:** Python, C/C++, Java, Bash, RISC-V Assembly
- **Development:** Tensorflow, PyTorch, PostgreSQL, Flutter, Flask, FastAPI
- **Operations:** Git, Docker, Kubernetes

POSITIONS OF RESPONSIBILITY

- **Academic Council Representative**, CS'19 Batch IIT Ropar
- **National Service Scheme Member**, Plantation and Cleanliness Drive IIT Ropar
- **Representative**, Coding Club IIT Ropar
- **Problem Setter**, DebugIT, Coding Club, Zeitgeist IIT Ropar
- **Organizer**, Fury Road, Robotics Club, Advitiya IIT Ropar