

EDUCATION

University of Oxford – *MSc Advanced Computer Science*

[Graduation- September 2022]

University of Delhi – *BSc (Hons) Computer Science* – 8.42 CGPA, First Division Honours

[Class of 2020]

WORK EXPERIENCE

UVRobots – *Mobile Robotics Engineer*

[Aug 2020 – Sept 2021]

- Developed Flask REST API to livestream video processed with Computer Vision techniques, built depth maps & visualised LiDAR odometry
- Built a React Native application which interacts with ROS melodic nodes and turtle bot to control navigation of the robot

Omdena – *Machine Learning Engineer (One of the 28 Global AI experts selected)*

[March – June 2020]

- Performed LDA topic modelling, time series analysis, correlation & exploratory data analysis on the COVID-19 policies by the governments to understand the impact of the policies during a pandemic over the vulnerable groups. Results showcased at UN AI for Good Summit'20

HushTech Solutions – *Co-Founder*

[June 2019 – July 2021]

- Self-taught conversational technology developer, developing omni-channel messenger chatbots & RPA solutions powered by Natural Language Processing to help businesses automate their customer interactions, marketing and lead generation

Impute Inc. – *Mobile Application Development Intern*

[March – June 2019]

- Developed & extensively trained a Hybrid Chatbot with contextual conversation for Fluent8 iOS app using Node.js & Dialogflow AI
- Deployed webhooks on Firebase Cloud Function, directed fallback user queries to external APIs to enhance the conversational experience

Inverted Sense – *Chatbot Development Intern*

[Dec 2018 – March 2019]

- Built messenger chatbots for real businesses using Twilio, Chatfuel, Janis.ai. Worked on designing, building, training & testing bots
- Proposed and successfully developed an in-built shopping cart & up-selling feature which led to higher lead conversions & ROAS

RESEARCH EXPERIENCE

Oxford Rhodes AI Lab – *Research Lead*

[May 2022 - Present]

- Leveraging GNNs to model turbulence closures using symbolic regression in collaboration with CLIMA, CalTech, MIT & NASA

University of Oxford – *Chatbot Development Research*

[Feb 2022 - Present]

- Developing a Question-Answering language model for the Philosophy Dept to help convey their research work over website/messenger

Oxford Human Centred Computing – *Decentralised Applications Researcher*

[Nov 2021 - Present]

- Working on the Ethical Web and Data Infrastructure in the age of AI project under Sir **Tim Berners-Lee** to build decentralised web apps using MIT's SOLID framework, enhance user autonomy with decentralised data storage on pods & using privacy preserving ML

Department of Computer Science, University of Delhi – *NLP Student Researcher*

[March 2020 - July 2021]

- Built a serverless NLP-based web voice app for feedback collection. Spearheaded 3 projects- Ensemble ML Fake News detection, GPT-2 Research Article Title Generation & COVID-19 News Summariser using transformers. Co-authored and published papers in IEEE & Springer

AI Research Lab, University of Delhi – *Computer Vision Student Researcher*

[June – Sept 2019]

- Self-initiated research work under Dr. Amita Kapoor wherein I built an Assistive System for Autonomous Vehicles based on Deep Learning & Computer Vision. Compiled Darknet with OpenCV for real-time predictions. Implemented a bash script to automate bulk testing & mAP

PROJECTS | Github : github.com/hunarbatra

- covid19variants.org** [React, Python] - COVID-19 variants genomic surveillance open-tracker. Created data pipelines & built visualisations.
- COVID-19 Tweets Fake News Detection** [Python, NLTK, Scikit] - WhatsApp bot to classify fake news using ensemble ML boosting approach
- COVID-19 News Summarizer** [Python, Transformers] - GPT2, BERT, XLNet, T5, BART to perform abstractive/extractive text summarization
- Research Article Title Generation** [Python, GPT] - NLG fine-tuned GPT2 trained over arXiv articles for title generation of research abstracts
- Voixt** [JS, HTML, CSS, Chrome TTS] - A Chrome Extension to read aloud the textual content on any browser tab, enabling TTS
- HunAI** [Python, GPT] - A pre-trained response generation, DialoGPT DSTC model based Telegram Bot buddy, trained on Reddit discussions
- Real Time Voice Cloning** [Python, Synthesizer, TensorFlow] - Transfer Learning based voice cloning on the recorded input to create TTS
- Songify** [Python, GPT 2] - A GPT-2 based song lyrics generator based on a transformer natural language processing model

AWARDS & ACHIEVEMENTS

- Student of the Year**, Department of Computer Science, University of Delhi, 2020
- First Indian** to receive The Mars Generation **24 under 24** Award in Leaders & Innovators in STEAM category, 2019
- National Finalist, Smart India Hackathon** Software Edition, (out of 5,000 teams) in India's largest hackathon by MHRD Govt. of India, 2019
- Highest GPA** in Data Structure, Machine Learning, Computer Graphics, Android, Software Eng, System Programming, PHP, Microprocessor
- National Winner**, Summer with Google (out of 20,000 participants), 2018

SKILLS

- C++, C, Python, Javascript, HTML, CSS, Java, PHP, SQL, Application Development (Native, React Native)
- Node.js, React, TensorFlow, PyTorch, PyTorch Geometric, Flask, OpenCV, Kubernetes, RASA, git, bash, Firebase, GCP, ROS, SOLID

RESEARCH PUBLICATIONS

- Medbot: Conversational Artificial Intelligence powered Chatbot for delivering Telehealth after COVID-19, **IEEE 5th International Conference on Communications and Electronic Systems (ICCES 2020)**; Urmil Bharti, Deepali Bajaj, **Hunar Batra** et al., IEEE Xplore [[Link](#)]
- Serverless Deployment of a Voice-Bot for Visually Impaired, **International Conference on Applied Soft Computing & Communication Networks (ACN 2020)**; Deepali Bajaj, Urmil Bharti, **Hunar Batra** et al., Book Chapter - Springer Singapore [[Link](#)]
- CoVShorts: News Summarization application based on Deep NLP transformers for SARS-CoV-2, **IEEE 9th International Conference on Reliability, Infocom Technologies and Optimization (ICRITO 2021)**; **Hunar Batra**, Akansha J, et al. - IEEE [[Link](#)]
- MUCE - A Multilingual Use Case Model Extractor using GPT-3; Deepali Bajaj, **Hunar Batra** et. al, International Journal of Information Technology (IJIT 2022), Springer [[Link](#)]