

AMAN JAISWAL

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EDUCATION

Indian Institute of Technology, Dharwad <i>B.Tech in Computer Science and Engineering</i>	8.11/10.00	Dharwad, KA, India <i>August 2016 - April 2020</i>
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EMPLOYMENT

Indian Institute of Technology, Mandi <i>Research Assistant</i>	Mandi, HP, India <i>June 2024 - Present</i>
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- Working on developing deep learning models for Gallbladder Cancer Detection.

Entrupy India Pvt. Ltd. <i>Senior Machine Learning Engineer - I</i>	Bengaluru, KA, India <i>April 2023 - Present</i>
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- Leading the development of macro authentication to replace reliance on specialized microscopic hardware, enabling scalability and transitioning Entrupy to a SaaS model.
- Led a team of five engineers to upgrade the authentication pipeline by developing a novel deep learning model, achieving a substantial improvement in True Positive Rate (TPR) from 60% to 85%. Deployed the optimized model on AWS with Ray for distributed computing, ensuring sub-millisecond inference time.

<i>Machine Learning Engineer - II</i>	<i>April 2022 - March 2023</i>
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- Developed Entrupy's macro fingerprinting solution, based on state-of-the-art deep learning models for keypoint-detection and dense-description matching, to uniquely differentiate between instances of the same SKU.

<i>Machine Learning Engineer - I</i>	<i>September 2020 - March 2022</i>
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- Researched and developed a 3D pose-estimation module to adapt hardware-specific sneaker authentication algorithms for use on images captured by smartphones. Resolved data scarcity by generating synthetic datasets using 3D sneaker models and Blender, enhancing training efficiency for deep learning models.

G7CR Technologies Pvt. Ltd. <i>Technical Account Manager</i>	Bengaluru, KA, India <i>May 2020 - August 2020</i>
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- Designed cloud infrastructure to facilitate seamless business integration with Microsoft's Azure cloud platform, including onboarding Zee, one of India's largest media conglomerates, onto Azure.

INTERNSHIPS

Indian Institute of Technology, Mandi, India <i>Research Intern in Aditya Nigam's Group</i>	Mandi, HP, India <i>May 2019 - April 2020</i>
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- Developed a state-of-the-art Video Steganography method, leading to a publication at IJCNN 2020 and enabling secure information embedding in video data.
- Extended image-based colorization models (Pix2Pix, Colorful Image Colorization) to videos. Developed a novel 3D-CNN architecture for video colorization, incorporating spatial and temporal fusion mechanisms.
- Designed a capsule-network-based architecture to improve unconstrained ear recognition on the UERC dataset.

PUBLICATIONS

En-VStegNET: Video Steganography Using Spatio-Temporal Feature Enhancement With 3D-CNN And Hourglass <i>Aman Jaiswal, Suraj Kumar, Aditya Nigam</i>	<i>July 2020</i>
IEEE International Joint Conference on Neural Networks - 2020, Glasgow (UK)	

PATENTS

Macroscopic Fingerprinting <i>Hemanth K. Sangappa, Aman Jaiswal, Akhilesh Yadav, Pratik Likhari, Ashlesh Sharma</i>	<i>June 2023</i>
WO Patent App. WO2023114435A1 (Published)	

Monocular Pose Estimation And Correction

Hemanth K. Sangappa, Aman Jaiswal, Rohan Sheelvant, Ashlesh Sharma

August 2022

US Patent 11,430,152 (Granted)

SENIOR THESIS

AutoClean: Towards Automated Data Cleaning

Dharwad, KA, India

Mr. Vitobha M.: IBM Research Labs, Prof. Kedar K.: IIT Dharwad

August 2019 - April 2020

- Collaborated with IBM Research Labs, under IBM's Global Remote Mentorship Programme, to conduct a comprehensive literature survey on existing automated holistic data-cleaning systems, identifying gaps and proposing improvements to enhance data quality and, consequently, the performance of underlying machine learning models.

ENGINEERING PROJECTS

Distributed Backup Server

Dharwad, KA, India

Prof. Kedar K. - IIT Dharwad

August 2019 - November 2019

- Developed a distributed backup service for a local area network (LAN) to utilize free disk space on computers for backing up files across the network.
- Implemented Java RMI API to establish communication links between computers, enabling backup, deletion, restoration of files, and space reclamation.

Smart Attendance System

Dharwad, KA, India

DevHack Hackathon - IIT Dharwad

January 2019

- Designed a pipeline with three independent components to detect students' faces in a classroom and automate attendance marking. Utilized OpenCV's LBP classifier for face detection, segmented and deblurred detected faces using Scale-RNN, and fine-tuned a Siamese Network trained on FaceNet for one-shot face recognition.

IIT-Dh : Buy And Sell

Dharwad, KA, India

Prof. N. L. Sarda - IIT Bombay

August 2018 - November 2018

- Designed a web portal for students to buy and sell used goods (hosted on college's intranet) with features like posting and deleting an add, rating a seller/buyer, chat with the seller/buyer.

TECHNICAL SKILLS

Programming	Python, C++/C, Java, Bash, MATLAB
Machine/Deep Learning	TensorFlow, PyTorch, Keras, OpenCV, Numpy, Pandas, Sklearn, Matplotlib
Web Dev	HTML, CSS, React, PHP, MySQL, PostgreSQL, MongoDB
Tools	Linux, Git, Jupyter, AWK, LaTeX
Cloud	Microsoft Azure, AWS

RELEVANT COURSEWORK

Computer Science	Computer Programming, Data Structure and Algorithms, DBMS, Design & Analysis of Algorithms, Discrete Mathematics, Theory of Computation, Computer Architecture, Operating Systems, Distributed Systems, Software Engineering, Statistical Pattern Recognition, Reinforcement Learning, Introduction to AI, Introduction to ANN and DL
Mathematics	Calculus, Linear Algebra, Data Analytics, Number Theory, Probability
MOOC's (Coursera)	Machine Learning, Specialization in Deep Learning, Specialization in Tensorflow

ADDITIONAL EXPERIENCE

Volunteer

Mandi, HP, India

Workshop on Applied Deep Learning (WADL) - IIT Mandi

July 2019

Organizer

Dharwad, KA, India

Workshop on Machine Learning & Deep Learning - IIT Dharwad

August 2018

Lab Assistant

Dharwad, KA, India

Physics Lab - IIT Dharwad

January 2018 - April 2018