Abhinav Kaushal Keshari

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Education

Purdue University, West Lafayette, USA **Aug 2021 – Aug 2023**
Masters in Computer Engineering

Indian Institute of Technology, Roorkee **Jul 2014 – May 2018**
B.Tech in Electronics and Communication Engineering

Technical Skills and Recognition

Programming	Python, C, C++, Java, SQL, Scala, JavaScript, MATLAB, scikit-learn
Library	Pytorch, Tensorflow, Keras, Numpy, Pandas, Spacy, OpenCV, Open3D, NLTK, Llama Index
Cloud and Others	AWS Sagemaker, AWS Lambda, AWS EC2, API Gateway, AWS DynamoDB, AWS Kinesis, AWS S3, Amazon EMR, Docker, Kubernetes, React, Node.js, Git, Spark, Kafka
Recognition	Generative AI with Large Language Model, Certification from AWS; Amazon Global Winner - Hackathon 2020 & 2019; Best research paper presentation in SPIE – 10th ICSPS Conference, 2018, Singapore; ACM ICPC Asia Amritapuri Site 2015 and 2016 Regional Honorable Mention

Career Experience

Samsung **Jan 2024 – Present**
Lead Engineer
- Leading the AI division of Samsung Internet to develop a contextual vector store for browsing data, enabling AI-powered features like smart suggestions, auto-completion, and intelligent tab management.

Dozee **Oct 2023 – Jan 2024**
Senior Data Scientist
- Developed AI model to predict live Blood Pressure using a non-invasive method (no contact) from BCG (Ballistocardiography) data for every 2 minutes with prediction accuracy margin of 10mmHg.

Purdue University - Cognitive Robot Autonomy & Learning Lab **Aug 2021 – Sept 2023**
Research+Teaching Assistant
- Built a novel neural network system for human dependent robot grasping in collaboration tasks. Used geometry-aware transformer for 3D shape completion, VAE and CNN based models for hand and robotic grasp prediction. Created benchmark for simultaneous grasps generation.
- Created a vision-language model for object localization and selection. Implemented a CNN based multi-object detection and NLP based language grounding.
- Assisted in teaching and graded for courses, Computational Model and Methods at graduate level, and Data Structures at undergraduate level.

Amazon **Jul 2018 – Jul 2021**
Software Development Engineer II, ML Systems
- Initiated Transit Time prediction model solving dynamic optimization on 4.8+ Million order data reducing average transit time to 2 days with 97% Delivery Estimate Accuracy. This unlocks $3.4 Billion in annualized incremental revenue.
- Built a Quantified Seller Feedback Model by providing sentiment analysis of 200 Million reviews on Amazon and scored them according to the identified categories.
- Led a team of 5 to design a system capable of generating unique tracking identifiers for 50+ different templates across third party carriers from different parts of the world.
- Deployed team's first on-demand cloud computing service using AWS EC2 and short term serverless application using AWS Lambda capable of handling 200+ TPS with low-latency of 10ms.
- Streamlined structure identification for a single integration point to support various transportation functions from 7 teams.

Amazon **May 2017 – Aug 2017**
Software Development Intern
- Initiated Prime Seller Experience by building a Seller/Carrier Performance Analytics Platform capable of extracting features from high throughput Amazon global shipments, leading to increase in 16,000 sellers enrolled and created 50 Million new products listing.

Projects

- Music Transformer Included genre as a compound word token for training a multi-genre transformer - Reduced inference time of a song by 7 seconds.
- Group Recommended System Designed algorithm for tripartite subgraph extraction consisting of groups, users and items - Implemented first Inductive Graph-based Matrix Completion on group recommendation tasks.
- Daily Foreign Exchange Rates Prediction Analysis on ARIMA, GARCH and SVR (RBF and Linear Kernel) using British/US foreign rate financial data, 2017

Publications

- Keshari, A.K., Ren, H. and Qureshi, A.H. (2023) CoGrasp: 6-DoF grasp generation for human-robot collaboration. In: IEEE Int. Conf. on Robotics and Automation, ICRA 2023, 29 May – 2 June 2023, London
- Keshari, A.K., Sharma, R and Nigam, M.J. (2018) Digitizing physical documents, SPIE 2018, Singapore