

SIFFI SINGH

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EXPERIENCE

Applied Scientist II

Amazon - AWS AI

Jul 2023 – Present

Pasadena, US

- Proposed and implemented an end-to-end real-time speech transcription and translation system for AWS Transcribe and Amazon Connect customers.
- Led the development of a generative AI-based trend detection system for multilingual call and chat analysis on a large-scale, enabling insights for Amazon Connect customers.

Applied Scientist

Amazon - AWS AI

Sep 2021 – Jun 2023

Cambridge, UK

- Experimentation, implementation, and end-to-end release to production for theme detection and semantic matching service in calls and chat conversations in AWS Connect.
- Language expansion of PII redaction from English to 10+ languages for call and chat conversation redaction.
- Web knowledge extraction for Alexa Question Answering: column classification, relation extraction, ontology alignment.

Software Development Engineer

Amazon - Alexa AI

Sep 2019 – Sep 2021

Cambridge, UK

- Optimized Alexa knowledge graphs via Scala-based performance analysis and stale fact removal.
- Built an end-to-end service to ingest structured facts from tabular data into Alexa knowledge graphs.

Deep Learning Research Intern

JMicon Technology

Jun 2017 – Jun 2019

Hsinchu, Taiwan

- Research and development of an unsupervised deep learning based face recognition, and clustering system in TensorFlow for devices with limited hardware capabilities. Technology launched into market as product *LivCore*.

Computer Vision Engineer Intern

Industrial Technology Research Institute

Jun 2018 – Aug 2018

Hsinchu, Taiwan

- Developed a benchmark data set. Evaluation of Image and LiDAR data for segmentation and tracking algorithm that can be tested in autonomous vehicles.

Research Intern

National Chiao Tung University

Feb 2017 – Jun 2017

Hsinchu, Taiwan

- Ensured robustness of the system by the implementation of a fixed-point C MoDSeT classification algorithm using a 3-D millimeter wave sensor on the DSP processor for autonomous cars.

HONORS & AWARDS

- Best Paper Award (1st) at IEEE International Conference on Consumer Electronics 2021.
- Silver Medal in ACM ICPC Asia Jakarta regionals 2017. Participant at ACM ICPC India Amritapuri regionals 2016.
- Ranked 1st in Home Alone Hackathon 2020 at Amazon Alexa.

EDUCATION

Master of Science - Electrical and Computer Science Engineering

National Chiao Tung University

Jun 2017 - Jun 2019

Hsinchu, Taiwan

Supervisor: Prof. Hsueh-Ming Hang

Thesis Title: Deep Learning based face clustering and recognition system.

Bachelor of Technology - Computer Science and Engineering

Dr. APJ Abdul Kalam Technical University

Aug 2013 – Jun 2017

Noida, India

Thesis Supervisor: Prof. Carrson C. Fung

Ranked 1st for academic year 2013-2017.

PUBLICATIONS

- Aboutaleb, Hossein et al. (2024). "MAGID: An Automated Pipeline for Generating Synthetic Multi-modal Datasets". In: *NAACL*.
- Tang, Liyan et al. (2024). "TofuEval: Evaluating Hallucinations of LLMs on Topic-Focused Dialogue Summarization". In: *NAACL*.
- Zhang, Yuwei et al. (2024). "Can Your Model Tell a Negation from an Implicature? Unravelling Challenges With Intent Encoders". In: *ACL*.
- Huang, Kung-Hsiang, Singh, Siffi, William Yang Wang, and Kathleen McKeown (2023). "SWING: Balancing Coverage and Faithfulness for Dialogue Summarization". In: *Association for Computational Linguistics: EACL 2023*.
- Song, Hwanjun, Singh, Siffi, Kaisheng Yao, and Saab Mansour (2023). "Enhancing abstractiveness of summarization models through calibrated distillation". In: *EMNLP 2023*.
- Singh, Siffi, Alham Fikri Aji, Gaurav Singh Tomar, and Christos Christodoulopoulos (2022). "A Relation Extraction Dataset for Knowledge Extraction from Web Tables". In: *29th International Conference on Computational Linguistics*.
- Singh, Gaurav, Siffi Singh, Joshua Wong, and Amir Saffari (2021). "Relation Extraction from Tables using Artificially Generated Metadata". In: *arXiv: 2108.10750*.

PROJECTS

Quite Useful Assistant for Coding

- Using Alexa as a rubber duck for debugging assistance.
- Implemented a chatbot through Amazon Lex which guides the user through detailing their problem, searches Stack Overflow, and attempts to match the user with teammates who had similar problems.

Loss Curve Visualization

- Aimed to study the intuitions of common practices in deep learning. Visualized weight values and plotted 3-D rendered plots to analyse data.

Twitter Sentiment Analysis

- Extracted sentiment of top tweets to determined people's opinion for a brand and identify functional requirements.

3D-Reconstruction of Images

- Performed computer-vision-based 3D reconstruction for creating 3-D images from 2D input enabling applications in Robotics.

Android App | Gist

- Developed and designed an informative android application endured out of the need to study relevant curriculum topic.

Android App | Voice Coach

- Designed an android app that combines vocal exercises & drama exercises to help in warm-ups concerning theatre practices for diverse styles and genres.

Website for Literary Fest

- Designed an informative website for University's Literary Fest 2016. Event was successful with 1000+ participants from 50 institutes

PUBLICATIONS

- **Singh, Siffi** and Hsueh-Ming Hang (2021). "A Continuous Learning System for Face Clustering and Recognition". In: *2021 IEEE International Conference on Consumer Electronics (ICCE)*.
- Yiwei Zhou, **Siffi Singh** and Christos Christodoulopoulos (2021). "Tabular Data Concept Type Detection Using Star-Transformers". In: *ACM International Conference on Information & Knowledge Management*.
- **Singh, Siffi** and K M (2015). "Internet of everything smart environment". In: *IEEE ICGIoT*.

SKILLS

- C, C++, Python, Java
- Tensorflow, Pytorch, Scala, PySpark
- AWS EMR, EC2, Lambda, DynamoDB, SNS, SQS, CloudFormation, SageMaker, Lex, Comprehend, Glue, SWF, Step Functions

ACHIEVEMENTS

- Received academic excellence scholarship for research internship at NCTU, Taiwan.
- Founder of Programming Club, mentored 100+ students.
- Received Google's Women Techmakers scholarship for Google Chrome Dev Summit'18.