Abhash Kumar Singh

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WORK EXPERIENCE

Amazon Web Services, Inc. **Feb 2021 – Present**
Software Development Engineer II, AWS Amplify Seattle, WA

- As part of the Amplify Swift team, I have worked on features spanning Auth, Datastore, Geo, API(REST/GraphQL), Face Liveness and PubSub.
  - Delivered NoLight Challenge client for AWS Rekognition, onboarding a new customer with $3.3M ARR
  - Designed and launched a new PubSub client for AWS AppSync Events 🔗
  - Implemented Passwordless flows for authentication, bringing 10+ new customers to Amplify 🔗
  - Improved Datastore query performance for GraphQL schemas with secondary indexes by ~25% 🔗

University of Wisconsin - Madison **Spring 2020, Fall 2020**
Reader/Grader - Artificial Intelligence (CS540) Madison, WI

- Graded assignments and mentored students on topics like k-NN algorithm, A*search, Hill Climbing, Naive Bayes classification, PCA, Minimax algorithm, Hierarchical clustering, Linear Regression and CNN

Amazon Web Services, Inc. **May 2020 – Aug 2020**
Software Development Engineer Intern Seattle, WA

- Reduced the number of steps to 1 from a multi-step(5-10) process for customers to file GitHub issues by implementing Developer Menu in AWS Amplify iOS library 🔗

TiVo, Inc. **Aug 2017 – Jul 2019**
Software Development Engineer Bengaluru, India

- Reduced memory usage of the TiVo Android app by ~20% through efficient recycling of bitmaps

Samsung Research Institute **Aug 2014 – Jul 2017**
Senior Software Engineer Bengaluru, India

- Rewrote the Text-To-Speech feature of CarMode Android App using SOLID principles leading to reduction in the number of bugs by ~60% in the next release version

SKILLS

- **Programming languages:** Java, Swift, Python, Kotlin(exposed to), Matlab(exposed to), R(exposed to)
- **Platforms exposed to:** Apple Platforms(iOS, macOS, tvOS, watchOS, visionOS), Android, Unix
- **Machine Learning frameworks:** NumPy, scikit-learn, pandas, PyTorch, Keras, TensorFlow, Matplotlib

PROJECTS

- **Activity Detection in Cholecystectomy Videos:** Improved classification accuracy by ~$6% for tool recognition task with Resnet-152 model 🔗
- **Layer Freezing for Data Parallel Fine Tuning:** Reduced total training time by ~65% reduction with a tradeoff of ~8% dip in test accuracy using Resnet-18 model on CIFAR-10 dataset 🔗
- **Data Augmentation for Languages with small datasets:** Achieved ~4.5% increase in average BLEU score with Random Swap method on a Hindi language dataset 🔗

EDUCATION

University of Wisconsin, Madison **Dec 2020**
M.S., Computer Science Madison, WI
Birla Institute of Technology and Science, Pilani **Jul 2014**
B.E.(Hons.) Computer Science Pilani, India

PATENTS AND PUBLICATIONS

- Systems and Methods for Content Preference Determination based on Swipe Analysis 🔗
- Smart tagging of user feelings while consuming media content 🔗
- Learning a new language while consuming media content 🔗