

# Abhash Kumar Singh

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## WORK EXPERIENCE

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### Amazon Web Services

Feb 2021 – Present

*Software Development Engineer II*

*Seattle, WA*

- AWS Amplify provides libraries for frameworks, like Swift, JS, Flutter, Android and to help build, connect, and host fullstack apps on AWS. As part of the Amplify Swift team, I have worked on features spanning Auth, Datastore, Geo and API(REST/GraphQL).
  - Improved Datastore query performance for GraphQL schemas with secondary indexes by ~25%
  - Developed the toolkit to integrate 3rd party IdP Platforms to Amplify, with Auth0 (Okta) as the first provider, opening up Amplify to their 2k+ customers
  - Implemented Passwordless flows (OTP/Magic Link), bringing 35+ new customers to Amplify

### 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

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

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

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- *Languages:* Java, Swift, Python, Kotlin(*exposed to*)
- *Platforms exposed to:* iOS, macOS, Android
- *Machine Learning libraries:* NumPy, scikit-learn, pandas, PyTorch, Keras, TensorFlow, Matplotlib

## EDUCATION

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### University of Wisconsin, Madison

Dec 2020

*MS, Computer Science*

*Madison, WI*

### Birla Institute of Technology and Science, Pilani

Jul 2014

*B.E.(Hons.) Computer Science*

*Pilani, India*

## PATENTS AND PUBLICATIONS

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- *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*

## PROJECTS

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- **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