Ashik **Salim**

SOFTWARE ENGINEER

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Summary

Software engineer across multiple domains for 8+ years, with a prime focus on Microsoft technologies - Mixed Reailty, Azure Spatial Anchors, WinML, UWP. Worked on multiple applications developed for HoloLens in Unity3D, multiple of them showcased internationally. Currently seeking a career that provides an opportunity for results from genuine innovation.

Work Experience

Reply Valorem   *Kerala, India*

SOFTWARE ENGINEER   *September 2014 - Present*

- **HoloBeam:** 3D Telepresence application that captures color and depth information from Kinect, transmits it over the internet and enables viewing it as a hologram using HoloLens on the remote end, developed in Unity.
  - Developed native plugin for Unity3D written in C++ which achieved hardware accelerated video decoding and interoperability with WebRTC libraries.
  - Developed a custom codec for encoding and transmission of depth data over a traditional H.264 video stream.
  - Ported WebRTC implementation by Google to the UWP platform, with focus on maintaining compatibility with code and build systems used by upstream.
- **HoloFlight:** 3D Real-time and historic flight data tracking and visualization on HoloLens, developed in Unity.
  - Developed a system to parse, filter and store positional data of flights from a web api and accurately animate 3D representational objects in a scale to world 3D space based on this data.
  - Developed a real-time procedural terrain mesh generator using Bing maps api, combining both satellite image overlay and height maps.
- **Azure Spatial Anchors Showcase:** Android/iOS application that allows users to load 3D models and place them in real world to demonstrate the capabilities of Azure Spatial Anchors by Microsoft, developed in Unity.
  - Developed multi-user synchronized object manipulation module based on SignalR.
  - Wrote native plugins for Android, iOS to enable MSA authentication in a Unity3D application using MSAL library by Microsoft.
- **XPresent:** Rich content presentation application which enables users to present interactive elements such as 3D models and real-time on-screen drawing.
  - Investigated Apache licensed hand recognition model from Mediapipe by Google and converted it into ONNX, enabling native inference on UWP via WinML.
  - Developed a simple state machine for hand recognition with 5 gestures and experimental drawing support.
  - Modified Directshow based virtual webcam to work with UWP, enabling easy interfacing with existing meeting solutions like Microsoft Teams.

Education

Bachelor of Technology in Computer Science   *Kerala, India*

GOVT. MODEL ENGINEERING COLLEGE   *May 2010 - April 2014*

Recognitions

HoloFlight, Showcased at Unite India 2017   *November 2017*

HoloBeam, Showcased at CES 2018 by invitation from Microsoft   *January 2018*

HoloBeam, Presented at keynote of Inspire 2018 by Satya Nadella   *July 2018*

HoloFlight, Presented at NASTech 2022   *December 2022*

Certifications

Neural Networks and Deep Learning, Coursera   *December 2019*

Improving Deep Neural Networks, Coursera   *January 2020*