Viraj Sinha

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EXPERIENCE

Software Development Engineer I at Microsoft   Jan 2016 – Nov 2017
Software Development Engineer II   Nov 2017- Present

Video Analytics
- Building a video processing pipeline which takes IP camera video feeds and applies a series of operations. Currently deployed to the City of Bellevue performing automobile traffic analysis using intersection camera footage. Able to count cars and car turning direction at 25fps on 0.25 virtual CPUs (low cost on cloud hardware)
- Built internal telemetry and introspection system for this pipeline.
- Worked with research team to port novel tracking and detection algorithms to production

VR Concept Work
- Exploration sprint to build 3 VR demos in 1 month using Unity. Worked with custom shaders, 3D vector mathematics (quaternions), and VR tools.
- Proud of this even though it didn't result in any shipped products.

Bing Native Mobile Ads
- Small team effort. Built the data acquisition and the backend webservices to bootstrap this project from scratch.
- Built and scaled NodeJS webservice to serve >250,000 ads per day to users of the Echo lock screen app.
- Aggressively scraped online sources to build a collaborative filtering dataset from which to target ads.
- Handed project off to the Bing Mobile Ads team in May 2017.
- Won AI Core Greatness Award for FY17 for this work.

Loop Location Analytics
- Location analytics platform for mobile apps, battery efficient, for iOS and Android.
- I was responsible for system monitoring and telemetry, built a system which timed the flow through our microservice architecture. Maintained 99% uptime and worked with the team to respond quickly to livesite alerts and issues.
- Built and shipped an iOS app to use our system for automatically logging bike rides and runs to Strava.

EDUCATION

Participant at Recurse Center (formerly Hacker School)   February 2015 – May 2015
- Studied Haskell
- Built a music player in Scala
- Built an iOS app which used computer vision to score a game of Go

Computer Science BSc. Purdue University   December 2014
Minors in Biology, Psychology, Philosophy

Software Engineering Intern at at Numenta, Inc.   Summer 2014
- Reimplemented ML model serialization/load protocol, increased performance by 50%
- Built a stock market anomaly detection tool using Numenta's anomaly detection algorithm

Undergraduate Researcher at Purdue Neuroprosthesis Research Lab   Summer 2012
- Developed Matlab software reading from electrodes implanted in rat brains

Software Engineering Intern at Intrepid Technology, Inc.   Summer 2011
- Contributed Unified Parallel C (UPC) support to GNU Indent
- Wrote an AI Mancala player in C/UPC