Kumar Pallav

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EDUCATION

Indian Institute of Technology, Bombay

Bachelor of Computer Science and Engineering (with Hons.);

CGPA 8.6/10

Mumbai, India
Jun 2010 - May 2014

EXPERIENCE

Microsoft

Software Engineer, OneNote

Redmond, WA
Jun 2016 - Present

- MODERN HIERARCHY SYNC `C++ NODEJS`
  Worked on a new sync platform which would load notebook structure and hierarchy faster than the current state of the art. Implemented client side representation of this hierarchy, derived from existing representation. Added functionality to be able use the new representation without the need of resetting cache or reloading the notebook. Built a small tool to visualize and debug this new representation.
- NOTEBOOK CLOUD MIGRATION `C++ C\#`
  Componentized native code from OneNote desktop app to convert local OneNote notebooks to cloud compatible notebooks. This was used in the new SharePoint Migration Tool.
- MAGIC INK LOOKUP AND WHITEBOARD APP `C++ C\#`
  Worked on recognizing ink strokes into words (using onboard IA) and recognizing keywords/entities given the context (using custom entity recognition service). Implemented accumulation of images and interactive widgets (from various online sources) related to the keyword, to be inserted onto Whiteboard canvas. Implemented sharing experience for the new collaboration focused Whiteboard app which included creating and joining a shared session.
- CONTENT ADDINS `C++ NODEJS`
  Implemented content addins, for OneNote desktop app, as small embedded web apps that would get hosted within managed WebView controls. Created their persistence model and rendering on the desktop app.

Microsoft

Software Engineer, OneNote

Vancouver, Canada
Nov 2014 - May 2016

- EMBEDDED VIDEOS AND WEB CONTENT `C++ C\#`
  Worked on adding ability on OneNote to host web content, making sure it is backwards compatible. Implemented features to make handling and editing web content on the OneNote page easier. Added support for this feature on OneNote web app.
- MERGED CELLS FOR TABLES `C++ C\#`
  Added support for spanned cells for tables in OneNote, keeping in mind backwards compatibility. Implemented these capabilities in OneNote web app.
- REALTIME INK `C++ C\#`

As a ramp up project, prototyped ink collaboration using SignalR web-sockets. Worked on experimenting load and delay with multiple inputs in realtime.

Oracle
Bangalore, India

Software Engineering Intern, Apps for Enterprises
May 2013 - July 2013

- ○ CONTAINERIZATION OF IOS APPS `OBJECTIVE-C C`
  Worked on sand-boxing of enterprise applications (containerization), enabling their installation on employee's iOS devices, without worrying about security concerns. Implemented wrapping of library function calls using swizzling, objective-c backend, linker flags and dynamic library injection.
- ○ SANDBOXED BROWSER APP `OBJECTIVE-C`
  Built a demo browser application for iOS. Containerized the app using the custom script, for it to work only for whitelisted urls.

PROJECTS

COURSE ALLOTMENT SIMULATION USING SAT SOLVER `C++ MINISAT GLUCOSE`
As part of Bachelors project, worked on solving the real world problem of finding a best course allocation under various constraints as a SAT (Satisfiability) problem and infer effects of different policies on course allotment and choices. Studied relative efficiency of various heuristics modeled on different solvers like MiniSAT and Glucose.

IIT BOMBAY HOSPITAL DIGITIZATION `JAVA MYSQL`
Created a complete web application in Java that could handle operations on relational MySQL databases to handle various processes of the university hospital.

SIMPLE 2D PHYSICS ENGINE `C++`
Wrote a physics engine for simple round bodies providing a back-end that could generate coordinates in real-time with collision, gravity, restitution and custom resolution of time.

SOCIAL SEA `PHP HTML JAVASCRIPT`
Create a lightweight social search engine that shows the results ranked (using page-ranking) according to one's peer-group search history and rating.

SKILLS

LANGUAGES
C++ C\# JavaScript Java C

TECHNOLOGIES
NodeJs UWP Win32