Prabir Pradhan

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Education

Grinnell College
Expected May 2018
Bachelor of Arts, Computer Science/Mathematics

- GPA: 3.80 - Dean's List
- Selected Courses: Computer Vision Applications to Digital Cinema, Artificial Intelligence, Abstract Algebra

Related Experience

Software Engineering Intern, Google Lens - Pixel 2017 **May 2017 - Present**
Google, Alphabet Inc, *Los Angeles, CA*
Research and Machine Intelligence - Mobile Vision Team

- Oversaw new feature for Google Lens on the Pixel 2017 smartphone from design to development for displaying, editing, and having rich interactions with aggregated OCR text entities
  - Presented new design for displaying multi-line aggregated information such as Contacts and Events within an existing UX framework to designers for feedback and iteration
  - Improved clustering algorithm for generating more meaningful aggregated results and added detection for new entities such as event poster titles while supporting user-driven disambiguation for low-confidence entities
  - Developed multiple prototypes of new components and incorporated feedback from weekly demos
  - Created a User Study plan pinpointing specific aspects to test usability and discoverability; Implemented User Study prototypes; Reviewed feedback from 7 study participants with UX lead to improve final design
  - Adapted new feature to be accessible and beneficial to blind or vision-impaired users
- Developed comprehensive testing infrastructure (unit tests, integration tests, and golden tests) for complex multi-frame OCR data merging and comparison pipeline
  - Identified multiple crucial logic flaws and resolved them with senior SWE team members

Director of Android Development **December 2014 - Present**
Grinnell AppDev, *Grinnell, IA*
A team of developers who maintain 7 apps with over 1,000 daily-active community users and over $150k in funding

- Managed 11 developers while being tech lead for 3 projects and product lead for 2 projects
  - Coordinated development progress of app design, iOS app, server framework, and Android app
  - Modularized components into libraries to make code easily reusable and to benefit the Open Source community
- Taught weekly classes in intermediate level Android Development to 20+ student developers
- Created a Publications app for the college newspaper that has over 200 active readers
- Engineered a fully featured app to stream the college radio station, with 250+ listeners

Computer Science Tutor and Grader **August 2015 - Present**
Grinnell College, *Grinnell, IA*

- Tutored 6 or more students every week, reteaching course material in larger groups when necessary
- Graded for 2 introductory CS courses and 1 advanced course - Analysis of Algorithms

Mobile Software Engineering Intern **May - July 2015**
Smart Solutions, *Kathmandu Nepal*
A software development firm providing web and mobile solutions for international banks, enterprises, and NGOs

- Designed and created a full-stack media browsing solution with an Android app and a server component for UK-based NGO Practical Action to download and access publications, videos, and audios without connectivity
- Improved accessibility by supporting screen-readers and 15 languages, including RTL languages

Research

Proof Assistants and Pedagogy Project **May - August 2016**
Grinnell College, *Grinnell, IA*

- Built a proof assistant with a web interface aimed at teaching undergraduates techniques to prove program correctness, while giving rich tailored feedback to guide students
  - Utilized Haskell and the Z3 Theorem Prover from Microsoft to write the proof engine
  - Created a novel proof language that mimics handwritten proofs, with parsers for Java and Python
  - Tool will be used in introductory CS and discrete mathematics courses in Grinnell and Haverford
- Presented the project and poster at the SIGCSE conference in March 2017 in Seattle, Washington
- Coauthored a paper presented the prover for the Midwest Programming Language Summit 2016

Projects

on github

Freeze-Frame: Robust C++ video post-processor that freezes an area inside four points in a video and tracks the frozen frame across camera movements over the rest of the video using computer vision
CS Scheduler: Rails App to gauge student interest to plan future courses for the Grinnell CS Department
Location Tracking: Android app to gather location and call data from villagers in rural Nepal for research on selective migration and demographic consequences of climate-related disasters at University of Washington
HMM: ML framework to restore up to 70% of corrupt files using Hidden Markov Models and English language models
Android Visualizer: Standalone audio visualizer to go along with the streaming app for the college's radio station

Skills & Interests

Programming Proficiency: Java • C • Ruby • Scheme • Haskell • Android Java and NDK • Ruby on Rails
Other Computing: C++ • Git • Unix/Linux • LaTeX • Adobe Creative Suite • PHP • SQL • JavaScript
Other Interests: Design • Photography • Hiking • Mountain Biking • Jazz Trumpet

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