PRAMOD KOTIPALLI

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SUMMARY

Let's create cyborgs! / Huge advocate of *Symbiotic Artificial Intelligence,* user-centered design, and accessibility. / Interested in projects at the intersection of artificial intelligence, augmented reality, wearable computing, and cognitive science. / Highly-experienced with full-stack development, human-computer interaction research, UX+graphic+motion design, and startups.

EDUCATION

Stanford University   Sept. 2019 - June 2021
Masters of Science Computer Science · 2021

Georgia Institute of Technology   Aug. 2015 - Aug. 2019
Bachelors of Science · Computer Science · 2019
GPA: 3.91/4.00 (Faculty Honors)
Coursework: Machine Learning, Data Structures, Algorithms, Assembly & C, Object-Oriented Programming

EMPLOYMENT

Space Exploration Technologies Corp. (SpaceX) ·   Hawthorne, CA ·
Software Engineering Intern   Sept. 2017 - Dec. 2017
- Designed, implemented, tested software solutions · Worked closely with PMs and UX designers
- Automated supply chain processes in ERP: mitigated legal risk, increased business efficiency
- Engineered SQL Server + .NET/C# backend that exposed RESTful APIs to AngularJS front-end
- Saved 1,500+ hr/yr of manual data entry · Led projects now used by all 7,000 employees

Cisco Systems · *Software Engineering Intern*   San Jose, CA · May 2017 - Aug. 2017
- Architected, researched, implemented test automation framework for Cisco's Cloud DVR services
- Developed load testing and analysis framework to generate HTTP traffic and collect relevant statistics
- Designed AngularJS front-end with Python RESTful API and ELK · Orchestrates Docker containers
- Saved 10+ hr/wk of manual and error-prone OS/network configuration · Increases engineer efficiency

School of Interactive Computing · *Project Lead / Undergrad. Research Asst.*   Georgia Tech · Jan. 2018 - Present
- Developing and analyzing Augmented Reality applications for intelligent warehouse mgmt. systems
- Researching responsiveness to notifications on head-worn displays and wearable displays
- Developing Google Glass apps and Python APIs with Prof. Thad Starner, Contextual Computing Group

Undergrad. Research Asst.   Georgia Tech · Jan. 2016 - Dec. 2016
- Developed predictive health analytics for heart disease patients with Professor James Rehg, Wall Lab
- Used MATLAB and Python to apply DSP + HMMs to on-body sensors to identify concerning behavior

School of Mechanical Engineering · *Lead Software Engineer*   Georgia Tech · Jan. 2016 - May 2018
- Built service used by 2,500 students and judges in Georgia Tech's Capstone Design Expo.
- Integrated user feedback for highly-intuitive UX signicantly reducing user onboarding.
- Collaborated through Git-centered workows with a tight feedback loop from advisers.
- Technologies used: Django, PostgreSQL, Git, jQuery, responsive HTML/CSS design.

AWARDS

Best Paper, *ACM ISWC 2018*   Oct. 2018
- Awarded for research work published to ACM International Symposium on Wearable Computers
- Studied novel wearable RFID-based verification system for the central process of order picking in logistics

Grand Prize winner, *HackATL, Emory University*   Nov. 2016
- Awarded for developing and presenting a comprehensive business plan to Atlanta-area venture capitalists
- Developed wearable tech for on-demand community help in emergency situations on college campuses

Microsoft Prize, HackATL, *Microsoft Corporation*   Oct. 2015
- Won 2nd place in Microsoft Prize category at HackATL, a tech startup hackathon at Emory University.
- Created hardware prototype for smart watches wearers to shake hands and connect online.

Grace Hopper Conference travel grant, *Google*   Oct. 2016
- One of 100 students awarded full scholarship to attend Grace Hopper Celebration of Women in Computing
- Developed skills based on demonstrated interest/experience in promoting the role of women in computing

Faculty Honors, *Office of the Registrar*
- Awarded to students who earn a 4.0 GPA in a full-time academic semester
- Received in multiple semesters including Spring 2016, Summer 2016, Spring 2017, and Spring 2018

SKILLS

LANGUAGES: Python, JavaScript / TypeScript, C#, Swift, Java, MATLAB, HTML5 / CSS3, Shell
FRAMEWORKS: .NET, iOS, Django + REST, Angular, Ionic, NodeJS, Android
PACKAGING / DEPLOYMENT: Vagrant, Docker, Heroku, Microsoft Azure, Digital Ocean, Gradle
CONTINUOUS INTEGRATION: Git + Git Flow, Jenkins, Travis CI / CircleCI / Wercker
DATABASES: Microsoft SQL Server (T-SQL), PostgreSQL, Redis
MACHINE LEARNING / COMPUTER VISION: hmm-learn, Digital Signal Processing, MATLAB, scikit-learn
IDES / ENVIRONMENTS: PyCharm, Visual Studio + ReSharper, IntelliJ IDEA
GRAPHIC DESIGN / MOTION GRAPHICS: Sketch (macOS), Adobe Illustrator, Adobe After Effects, Adobe Premiere Pro, Adobe Photoshop, Adobe Audition, MAXON Cinema 4D, Octane Render

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PUBLICATIONS

Notification perception with visual distraction on Google Glass and Smartwatches · (in progress)
Aug. 2018 - Present

- We investigate how are notifications are perceived differently when presented on wrist-mounted displays (e.g. smartwatches) and head-worn displays (e.g. Google Glass).

- We formulate and execute a dual-task study paradigm pairing notification stimuli with a visual search distraction task developed by prior literature.

Augmented Reality Head Worn Display Positioning for Sparse Order-Picking · (under review by ACM IMWUT: Interactive, Mobile, Wearable and Ubiquitous Technologies)
Jan. 2018 - May 2019

- Order picking forms a large part of modern logistics, accounting for up to 55% of operating costs in over 750,000 warehouses around the world that currently ship over \$1 trillion worth of goods every year. Head worn displays (HWDs) help pickers more accurately and efficiently pick items in industry, and order picking can be a good surrogate task for investigating on-the-go use of HWDs in general.
- We used the Magic Leap One, a binocular head worn display, to investigate four different positions in the visual field for a virtual picking display: center-center: $-5°$ to $5°$ horizontally and $-5°$ to $5°$ vertically, center-right: $10°$ to $20°$ horizontally and $-5°$ to $5°$ vertically, bottom-center: $-5°$ to $5°$ horizontally and $-15°$ to $-5°$ vertically, and bottom-right: $10°$ to $20°$ horizontally and $-15°$ to $-5°$ vertically.
- The goal of the study is to determine the most efficient order picking display position in an environment that requires walking to travel between the pick shelves. We found that bottom-right results insignificantly worse than or, at best, similar to other positions in terms of accuracy and users' overall preference, subjective accuracy, subjective speed, comfort, and learnability.
- Due to relative parity with center-center in terms of speed, accuracy, cognitive workload, and user preference, the center-right position provides the best-performing binocular display position for HWD manufacturers and warehouse order pickers while minimizing the risk of the cognitive capture observed in other studies using the center-center position.

RF-Pick: order picking using a HUD with wearable RFID verification ·
ACM International Symposium on Wearable Computers
Jan. 2018 - Oct. 2018

- Order picking accounts for 55% of the annual \$60 billion spent on warehouse operations in the United States. Reducing human-induced errors in the order fulfillment process can save warehouses and distributors significant costs.
- We investigate a RFID-based verification method wherein wearable RFID scanners, worn on the wrists, scan passive RFID tags mounted on an item's bin as the item is picked; this method is used in conjunction with a head-up display (HUD) to guide the user to the correct item.
- We compare this RFID verification method to pick-to-light with button verification, pick-to-paper with barcode verification, and pick-to-paper with no verification. We find that pick-to-HUD with RFID verification enables significantly faster picking, provides the lowest error rate, and provides the lowest task workload.

PROJECTS

UX / Graphic / Motion Designer
- Designed, animated, edited, and published over 40 short videos and 20 high-quality static renders
- Demonstrates improving skills in animation, modeling, video production, sound mixing, and vector art
- Continuing to gain mastery of MAXON's Cinema 4D and Adobe's Creative Cloud products
- Portfolio continues to grow with new original work uploaded every week: https://www.instagram.com/p13i.io/

dARts: play darts in augmented reality
May 2018
- Designed interactive experience for collaborative darts game in augmented reality
- Used iOS frameworks like SceneKit to draw planes/objects into real-world with ARKit

MetroSync: a web app to help musicians rehearse together
June 2016
- Designed/implemented web app featuring metronome synced across devices aiding in musical practice
- Developed real-time Web Socket-based app · Shared information between AngularJS front-end, REST API

RichCaptions: symbolic math captions for educational videos
Sept. 2016
- Designed/implemented UX for captioning and viewing videos with LaTeX-rendered math captions
- Developed AngularJS front-end leveraging YouTube API · Exposed Django REST API + PostgreSQL

Handshake: connecting people online through physical handshakes
Oct. 2015
- Developed hardware prototype for smart watches wearers to shake hands and connect online.
- Allows professionals to easily network at conferences and for students to easily connect with recruiters.
- Implemented RESTful API backend with ASP.NET WebAPI and Microsoft SQL hosted on Azure.
- Won 2nd place in Microsoft Prize category at HackATL, a tech startup hackathon at Emory University

ACTIVITIES

<gt-webdev/>, *President, Officer, Technical Speaker*
Jan. 2016 - Present

iOS Club, *Member*
Jan. 2016 - Present

Georgia Tech Leading Edge leadership development program
Jan. 2016 - May 2016