Dinesh Jagai

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EDUCATION

University of Pennsylvania, Philadelphia, PA **May 2021**

Master of Science in Engineering, Robotics || **Bachelor of Science in Engineering, Computer Science**

Minors in Mathematics & Electrical Engineering

Relevant Coursework: Algorithms & Data Structures, Software Engineering, Operating Systems, Computer Architecture, Web Programming, Databases & Info Systems, Machine Learning, Big Data Analytics, Computational Linguistics, Linear & Abstract Algebra

SKILLS

Programming/Scripting: Java & Kotlin, Python, C, C++, JavaScript, MySQL, MATLAB, OCaml, Verilog (HDL), Arduino, React, HTML, CSS
Frameworks & Tools: Git, Linux, MongoDB, Node.js, Apache Spark, LaTeX, Android Studio, Selenium, Solr, Microsoft Office, Junit
Libraries: Scikit-Learn, TensorFlow, Pandas, NLTK, NumPy, PyTorch, Matplotlib, BeautifulSoup, Keras || *Language:* English, Spanish

PROFESSIONAL EXPERIENCE

University of Pennsylvania, *Software Developer Research Assistant* || Philadelphia, PA **May 2020 - Present**

- Utilized Drupal, ApacheSolr, and AWS EC2 to build digital library for detecting and learning about lead dangers in water
- Implemented faceted searching of lead outreach materials using ApacheSolr by creating a classification taxonomy
- Leveraged QGIS API, JavaScript, and Node.js to collect and process users to determine risk for lead poisoning

Steignet, *Software Engineering Intern* || Atlanta, GA **May 2020 - August 2020**

- Assisted with building Natural Language Processing BERT classification model for automating email interactions with real estate agents by writing Python and Bash scripts to help in cleaning and classifying over 30K threads
- Ran various analyses to assess accuracy of NLP models and find bottlenecks in performance, led to 12% gain in accuracy
- Created web scraper to get property listing info from Redfin & Zillow using Beautiful Soup to add to Steignet' s database

College Houses & Academic Services, *Information Technology Assistant* || Philadelphia, PA **August 2018 - May 2020**

- Assisted over 800 residents in on-campus College Houses with hardware, software and network support
- Educated non-technical clients on security, computer maintenance, and troubleshooting

SELECTED PROJECTS

PennOS [C, Priority Scheduling, Signaling, Filesystems and Shell/Kernel Development] (Team of 5) (report) **November 2020**

- Built a full-feature User-level UNIX-like operating system with a FAT filesystem, kernel, and shell from scratch in C
- Worked primarily on the FAT file system and the shell implementing redirection, pipelining, and some UNIX commands

Favor App [Java, JavaScript, Node.js. MongoDB, Firebase, Kotlin, Full Stack Project] (Team of 4) (code) **Feb 2020 - May 2020**

- Built Android app that allows users to create, submit and accept favors primarily targeted to college students
- Constructed web-based application that allows admins to control, moderate and analyze activity of different favors
- Implemented multiple features including end to end communication, favor location tracking, etc. using Agile development

DengAI [Python, Keras, Scikit-Learn, NumPy] (code) **December 2019**

- Implemented multiple ML models that predicted weekly number of dengue cases in San Juan and Iquitos over five-year period using given environmental variables describing changes in temperature, precipitation and more from 1990

J Programming Language Compiler [C] (code) **December 2018**

- Wrote a simple compiler for J (a stack-based language) using C
- Constructed a parser that disassembles J code into tokens and generates the corresponding Assembly
- Managed the stack to grow and shrink based on function calls, conditionals, operands, operators, and other variables

LEADERSHIP & OTHER EXPERIENCE

University of Pennsylvania*, Graduate & Undergrad Teaching Assistant* || Philadelphia, PA **August 2018 - Present**

- Present concepts in computer architecture, assembly and C in weekly recitations; collaborate on assignment development
- Presented concepts in discrete math, algorithms, and data structures to over 200 students, composed and evaluated HW

Engineering Orientation Peer Advisor, *Mentor* || Philadelphia, PA **July 2019 - Present**

- Advise freshmen on course selection, student life, and other aspects of their transition to college; organize freshman events

Penn Educational Studies Program, University of Pennsylvania, *Organizer* || Philadelphia, PA **October 2018 - Present**

- Assist in organizing Splash@Penn by recruiting teachers, maintaining and developing the Splash@Penn website, identifying and establishing Partnerships & Sponsors, and teaching classes in discrete mathematics and programming during the event

AWARDS & INTERESTS

Awards: Penn Wharton Startup Internship Award (2020), Penn Emerging Scholar (2017), Louis Stokes Alliances for Minority Participation Awardee (2019), National Merit Scholarship Recipient (2016), Australian Mathematics Olympiad High Distinction (2016)
Technical Interests: Full Stack & Web Development, ML and AI, DevOps || *Non-Technical Interests:* Tennis, Teaching, Hackathons