Rajdeep **Bandopadhyay**

Firmware Engineer · **Aspiring Artificial Intelligence Engineer**

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github.com/mareep-raljodid **linkedin.com/in/rajdeep-bandopadhyay/**

Summary

Undergraduate Student (freshman, majoring in Computer Science) with 1+ years of R&D experience as a Research Assistant and 5+ months of Industry experience as a Firmware Engineer.
With a distinction diploma in Fine-arts and painting, I bring creative solutions and new perspective to any problem.

Available for co-op on alternating semesters from Summer 2020, references available upon request.

Skills

Languages: C, C++, Python, MATLAB, Visual Basic Script, Rust, YANG

Tools: JIRA Bug-Tracking, Git, Sysrepo/netopeer2, TensorFlow, Scikit-learn, Linux/Unix systems, ASIC Firmware

Industry Knowledge: Penetration Testing, Deep Learning, Encryption, IPC Frameworks, FPGA, NETCONF [NMC], DAS-UBOOT

Operating Systems: Mac OS X, Raspbian OS, Linux, Unix

Soft Skills: Communication, Self-starter, Team Oriented, Critical Thinking, Problem Solving, Self-motivation

Work Experience

Infinera

Sunnyvale, CA

Firmware Engineer [Co-Op] *Aug. 2019 - Present*

- Singlehandedly architect and developed a NETCONF application that uses sysrepo to perform certain tests on YANG Models
- Tracked and debugged certain submodule bugs with OEC and CLI for DCO within the Gen6 DCO firmware using JIRA bug tracker
- Worked with DAS-UBOOT to program the kernel to implement ECDSA encryption during booting and upgrading process
- Engineered and developed required firmware modules for FPGA used in certain interdependent projects within DCO
- Developed Upgrade Manager for the DCO firmware using proprietary Actor Framework [Inter Process Communication]

University of Cincinnati

Cincinnati, OH

Undergraduate Researcher (P/T) *Oct. 2018 - Present*

- Implemented RSBAC, a subset of the RBAC Model, to map permissions for users within the framework. Investigating and analyzing multiple threat scenarios, cyber and physical, on Things Gateway to develop a more secure, reliable, and open-source "Things Framework" using IoT devices
- Analyzed a more secure and reliable emergency-response system to be integrated with the Mozilla-IoT gateway.
- Defined architecture for the development of the auxiliary android application called "ThingZone".

This research project is funded by Mozilla and NSF (National Science Foundation)-USA

Education

University of Cincinnati, College of Engineering and Applied Science | GPA: 3.2 *Cincinnati, OH*

Bachelors of Science + Masters of Science (ACCLERATED) in Computer Science and Information Systems *Aug. 2018 - May. 2023*

Projects

- Sign Language Predictor: A Machine Learning Model [uses CNNs] trained on American sign language Dataset using tensorflow nightly built, to predict the letters or numbers from a picture of a hand doing a certain sign. [LINK]
- BLAM-er: A full stack CLI ENCRYPTION Application made with Rust [Encryptions available are DES and SHA] uses Honey Encryption Method to hash message/files/objects, and verify them. Uses a Deep Learning Model to generate the Honeys, using Natural Language Processing [LSTM]. [LINK]
- Portfolio: A personal website, designed and developed with a conscious effort to showcase projects. NOTE: Did not not develop this, just reused a open source code found on GitHub and edited it accordingly. [LINK]
- Super Chess: This application is a somewhat faithful recreation of chess. It allows two people to play a full game against each other. It provides a graphical representation of the board, as well as the ability to check that every move is legal and determine when each king is in check and also castle. [LINK]
- COMMANDO 2.0: A very interesting CLI-game (developed nightly, 1k lines of code) where player starts in an unknown map. Searches for three bombs, and deactivate them to acquire IDs, and lastly deactivates the main bomb to win the game. [LINK]

Everything mentioned here (and more) can be found along with demo/source code at mareep-raljodid.github.io

Extra- Curricular & Volunteer Activities

ACM-W: Support female classmates to empower and help all students succeed in Computer Science. Attend weekly meetings. 2018 - *Present*

Greater Hope: Mathematics Tutor for 8th and 9th grade students struggling with their grades in middle and high school. 2018 - *Present*

Artist: Canvas paintings, Fine-arts and scenery style Acrylic Paintings as a pastime hobby. *2017*

Animal Rights Activist: Plan-India volunteer and animal rescuer. *2016*

Languages

Native: **English**, **Bengali**, **Hindi** | **Working Proficiency:** Sanskrit, Punjabi

Awards and Honors

2018 **Recepient**, Global Scholarship | University of Cincinnati *OH, U.S.A*

2018 **Recepient**, Silver Medal | National Merit Search Examination | Ranked in the 95th percentile nationally *JHK, INDIA*

2017 **Recepient**, Distinction Diploma Certificate | Bangla-Parisad Institute of Fine Art and Painting *JHK, INDIA*

2016 **Finalist**, Geetanjali Associations | Fine Arts and Paintings | Ranked in Top 5 in the Jharkhand, IND *JHK, INDIA*

2016 **Finalist**, Thomas Paul's Science Quiz | State Recognized *JHK, INDIA*