Giri Gopalan

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Qualifications:

- Extensive experience in the areas of Software and Hardware Engineering across many industries, including **Big Data, Machine Learning, Networking and Security**.
- Experienced in Computer Vision (**OpenCV**), Machine Learning/Deep Neural Nets and IoT
- Experienced in ML/DL frameworks including: **scikit-learn**, **Tensorflow**, **Keras** (and a bit of Pytorch) and training various DNN models on **GPU**s
- Good knowledge of Data Science tools like: **pandas, numpy/scipy, matplotlib, etc.**
- Languages: **Python** (intermediate to advanced); C & C++ (basic)
- Recent experience in **AWS**, specifically AWS IoT Core, Lambda, DynamoDB, etc.
- Experienced with container technology using **Docker**
- Solid knowledge of IP networking protocols
- Worked in a wide range of companies from startups (founding engineer of a few) to mid-sized and large companies.

Work Experience:

Aruba Networks, Senior Engineer, Mar 2017 – Present.

- Conceptualized, designed and implemented an (end-to-end) project called Neutrino that involves Computer Vision based applications for Smart Buildings.
    - Project involves getting video streams from various cameras, detecting persons and objects (using **DNNs**) and providing useful analytics.
    - Implemented this product end-to-end (sensors/cameras all the way to Flask based UI framework)
    - The various components used in this project are:
        - Standard surveillance and Raspberry Pi based cameras
        - **OpenCV** and off-the-shelf DNN model (**MobileNetSSDv1**) for object detection
        - Infrastructure components: **Kafka, Cassandra** and a UI based on **Flask**
    - Currently working on moving the project into AWS using **AWS IoT Core**, **Lambda, DynamoDB and Fargate** services.
    - This project is partially completed. A helpdesk analyzer and room occupancy app are online. Working on people counter and object tracker apps.
    - Implemented above project almost single-handedly
- Experimented with face recognition systems, human pose tracking systems (for biometric identification)
- Transitioned various Niara Inc. projects and responsibilities to Aruba/HPE internal processes.

Niara Inc. (acquired by Aruba/HPE), Founding Engineer, May 2013 – Mar 2017

- As one of the founding engineers, took on many roles to steer the company to a successful acquisition by Aruba/HPE
- Involved in the early stages of the company formation from problem statement, defining addressable market, proposing and implementing a solution, etc.
- Worked with other systems and software engineers during the early system design phase to define and implement a **Big Data** system based on **Hadoop**. I mostly implemented the system hardware portion of it.

- **Managed a small QA** group that tested Niara's entire product solution, including its Big Data System. As a hands-on manager, I implemented many of the tests including:
    - Full system performance tests for the two major components of the system (the sensor and the analyzer)
    - Implemented a correlation tested that sanity tested the systems **ETL**
    - Designed and implemented the QA groups' infrastructure
- At the same time, headed the Hardware, Operations and Manufacturing functions for Niara's appliances. Designed and implemented various processes to enable smooth manufacturing and operations while working on a tight budget and timelines.

Stoke Inc, Principal Engineer/Director, May 2010 – May 2013

- Specified, designed and implemented a very complex line card for Stoke's existing chassis. This extraordinarily complex card contained 3 complex and high-powered CPUs (two Broadcom XLPs and once Freescale CPU), a 10Gbps switch (Broadcom Trident), two TCAMs and several other components. Overcame many challenges – from placement, layout, routing, thermals and unstable silicon – to deliver the product on time.
- Designed and implemented a next generation management card for Stoke's chassis.

Aruba Wireless Networks, Senior Staff Engineer, Sep 2005 – May 2010.

- Specified, designed and implemented several products, including: an intelligent switch, indoor and outdoor access points.
- Involved in the setup of JDM/ODM type manufacturing models with manufacturers based in Taiwan and China.

Previous Work Experience:

This is a brief summary of past companies I have worked for. Can provide details upon request.

- Network General, Consulting Engineer Jan 2004 – July 2005
- Tahoe Networks, Founding Engineer Jan 2001 – Oct 2003
- Shasta Networks (acquired by Nortel), Founding Engineer May 1998 – Jan 2001
- NET, Principal Hardware Engineer Oct 1993 – May 1998
- NetExpress Inc. (Member Technical Staff) Dec 1992 – Sep 1993
- Optima Computers Pvt. Ltd., India (Consultant) Jan 1992 – Dec 1992
- CDAC., India (Member Technical Staff) Aug 1989 – Jan 1992

Education:

- BS in Electrical Engineering, BMS College of Engineering, Bangalore, India. Graduated in 1989.

Publications/Awards:

- Co-author of "FPGA Implementation of the BH8000 Wormhole Router", published in the IEEE 1991 ASIC Conference and Exhibit.
- Part of team that won the "Vincent Bendix Award" in 1987 presented by Allied-Signal Inc., for building an 8 node parallel processor.