SUBIR VARMA

Email: varma.subir@gmail.com

SUMMARY

Tech. industry veteran with experience of working in both large companies as well as start-ups. Expert in the areas of Deep Learning and Reinforcement Learning. Has been teaching Graduate Level courses in these topics at Santa Clara University since 2017. Co-author of Deep Learning textbook (https://subirvarma.github.io/GeneralCognitics/Books.html) used in these courses. Co-Founder of General Cognitics which is an investment firm using AI based Trading Algorithms. Deep knowledge of Computer Networking and Wireless Broadband in particular (author of "Internet Congestion Control" tinyurl.com/43behswh). Has served in Technology Leadership roles in several companies. Has co-founded several start-ups in the Bay Area. Holder of 50+ US Patents.

EDUCATION

- Ph.D. in Electrical Engineering, *University of Maryland, College Park*
- M.S. in Electrical Engineering, *University of Maryland, College Park*
- B.Tech. in Electrical Engineering (JEE Rank of 61), *Indian Institute of Technology, Kanpur*

WORK EXPERIENCE

General Cognitics, San Jose, CA **2019 –**
Co-Founder and Managing Partner

- General Cognitics uses an innovative Deep Learning based predictive model to carry out automated trading of securities. Responsible for model design and updates and also serves as the chief Portfolio Manager.

Santa Clara University, Santa Clara, CA **2017 –**
Adjunct Professor, Leavy School of Business
Department of Information Systems and Analytics

- Teaches Graduate Level courses on Deep Learning and Reinforcement Learning (see https://subirvarma.github.io/GeneralCognitics/Courses.html for Lecture Notes and Slides).
- These courses offer a rigorous exposition of important algorithms accompanied by implementations using TensorFlow and Keras. Topics covered in DL Course include Backpropagation, Convolutional Neural Networks, Recurrent Neural Networks/LSTM, Transformers, GANs. Topics covered in the RL Course include MDPs, Dynamic Programming, SARSA, Q-Learning, DQN, Policy Gradients, Monte Carlo Tree Search, DeepMind Alpha Go algorithm.

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Catapulse Partners, Palo Alto, CA **2012 - 2016**
Co-Founder and Vice President

- Providing consulting in the area of Executive Hiring for some of the premier start-ups in Silicon Valley. Clients included companies such as LinkedIn, Google, Twitter, Marketo, Coursera, Flipkart.

Tellabs Inc/Wichorus, Santa Clara, CA **2008 – 2012**
Global CTO Group, Senior Principal Architect

- Wichorus was an industry leader in the area of intelligent wireless gateways for 4G networks, it was acquired by Tellabs in 2009. Led Wichorus's projects in the Femto Cell and Pico Cell Networking areas including Product Requirements, Definitions and Partnerships.
- Worked on next generation technology for LTE/WiMAX packet core and Mobile Backhaul networks. Architected the LTE WLAN Offload solution and created a Products Represented Tellabs at the 3GPP SA2 Body which sets LTE Standards.

Sprint Nextel Corp, Herndon, VA **2007 – 2008**
Technology Development Strategist

- Consulted for the XoHM division within Sprint Nextel, helping them with vendor relations and technology development required for the industry's first 4G WiMAX network deployment.

Aperto Networks, Milpitas, CA **1999 – 2007**
Co-Founder
Vice President of Technology
Vice President of Engineering

- Aperto was a pioneer in the Broadband Wireless space. It developed and sold an end-to-end wireless access system, consisting of Base Station and Client Units. These were widely deployed in large installations in Europe (Spain), South America (Ecuador and Chile) and Eastern Europe (Russia).
- During the initial phase of the company, led the Technology and Systems Architecture efforts and was responsible for defining the technical and product specifications for the Packetwave family of BWA products. Took part in recruiting the technical team in the company of more than 70, and oversaw the day-to-day engineering implementation of the product. Designed patented system algorithms that differentiated the product, and supervised the development of a comprehensive OPNET model that was used to optimize these algorithms.
- Took part in the IEEE 802.16 Standard's Body and significantly influenced the 4G WiMAX standard.
- Managed the 70+ person Engineering team in the latter phase of the company. Responsible for the Engineering execution in developing the PacketMax family of products, which is based on the IEEE 802.16d WiMAX standard.

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Hybrid Networks, San Jose, CA **1996 – 1999**
Director, Systems Architecture

- Hybrid Networks was one of the first companies to work on Cable Modem systems and was also a pioneer in Fixed Broadband Wireless Access.
- Lead System Architect for the Hybrid System 2000, one of the first two-way cable and wireless broadband access system and inventor of the innovative MAC protocol. Represented Hybrid at Cable Labs and took part in the standardization of the Cable Modem industry, initially in IEEE 802.14 and later as part of the DOCSIS consortium.
- Responsible for optimizing the performance of all Hybrid's products to best of breed in the industry, through extensive theoretical analysis of TCP flow control in asymmetric networks, followed by practical application to pertinent algorithms.

LSI Logic Corporation, Milpitas, CA **1995 – 1996**
Senior Systems Engineer, Communications Products Division

- Lead ATM Architect for the Communications Products Division. Responsible for charting the technical direction of the group. Designed the Traffic Management sub-system for the ATMizer-II SAR engine. Represented LSI Logic at the meetings of the ATM Forum and the IEEE 802.14 committee. Authored two widely cited inventions in the areas of high speed switch design and ATM SAR design.

IBM Corporation, Research Triangle Park, NC **1990 – 1995**
Advisory Architect, Emerging Technologies Group

- Responsible for the next generation Bandwidth Management and QOS support in IBM's ATM based Networking Broadband Services (NBBS) architecture. Developed new scheduling algorithms for providing delay and jitter guarantees for real-time traffic. Designed techniques for improving the data transfer efficiency of networking protocol software. Won an IBM Outstanding Technical Achievement Award for this work.

PUBLICATIONS

Please see my Google Scholar page (tinyurl.com/43behswh) and also my Github page (https://subirvarma.github.io/GeneralCognitics/Publications.html) for a list of publications along with citations.