

MICHAEL A. RAMALHO, PH.D.

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Lead Scientist / Senior Director / Business Development Manager for Blockchain/Crypto Mechanics and Governance

Extensive experience as a chief technologist, director, lead architect, lead business development manager, principal investigator, and engineering manager of high-talent engineers and graduate students in blockchain/crypto mechanics and governance, adaptive processing, machine learning/artificial intelligence, networking, communications, coding, unified communications, IoT, and spread-spectrum.

Excellent negotiation and outbound communications skills; often chairs and defines external high-tech forums. Defined, sold and led research and pragmatically developed cutting-edge technical products in both start-up and established company settings.

Excels and strives in developing technology solutions which require optimization in graduate level math, engineering, and computing disciplines such as machine learning, algorithmic convergence, reliable distributed computing or networking. Research initiative manager for million-dollar research projects. Technical manager for software-defined, high-tech features.

- Graduate school invited lecturer on Web3, DAOs, Crypto/Blockchain Mechanics, Distributed Ledger, Consensus Mechanisms such as “Probabilistic Validator Selection” (aka “Proof of Stake”) and “Proof of Work”, crypto money supply policy, blockchain virtual machines and smart contracts, crypto blockchain and crypto exchange governance, crypto policy and legal/fiduciary issues (e.g., custody concerns), tokenization (e.g., NFTs) and Layer 2 Blockchains and security of their associated channels/bridges.
- Formed 90-min panel on crypto governance at 1st IEEE GET Blockchain Forum in 2022. Invited lecturer at International Symposium on Intelligent Computing and Networking 2024 for blockchain and crypto mechanics. Presented half-day tutorial at IEEE SoutheastCon 2023 and long-format talks at University of South Florida and University of Minnesota.
- Proven track record for on-time, high-quality, analytically challenging product designs or applied research in C-suite, managerial, and individual contributor roles.
- Creative problem solver and technology innovator with over 59 patents, several peer reviewed papers and recipient of many technical awards in company and academic settings.
- Active in professional activities and university research. IEEE Florida West Coast Section Blockchain Community and Joint Signal Processing and Communications Society Chair.
- Negotiation skills: Championed designs in politically delicate external standards organizations (ITU-T, IETF, ETSI, 3GPP). Co-chaired VoIP Forum. ITU-T Moderator.

Experience

CISCO SYSTEMS, San Jose, CA / Remote

1999 – 2019

Independent Contributor & Standards, 2004 – 2019

Developed new Direct Sequence Spread Spectrum (DSSS) system for ultrasonic transmission in reverberant conference room environments (nine patents). System is in widespread use in

Cisco's telepresence product for proximity pairing services (over a million endpoints) and is still a significant differentiator for Cisco's telepresence offerings over competitors.

- Primary architect for video conferencing rate control. Proposed, designed, and built lab capability for the assessment of media rate-control algorithms. Co-authored rate control standards (e.g., IETF RFC 8698) supporting superior operation of Cisco's product.
- Primary architect and designer for the media monitoring and failover algorithm used in Cisco's Intercompany Media Engine. Work was Pioneer Award finalist (highest award).
- Developed the first-ever application of lossless codec technology specifically for use in VoIP. Design resulted in the ITU-T G.711.0 standard (was ITU-T moderator for work).
- Primary author or co-author of seven IETF standards (RFCs 2805, 3758, 7655, 8698, 8867, 8888, 8869).

Engineering Manager – Corporate Research, 1999 – 2004

Manager of industry-leading IETF MTS and Distinguished Engineers. Instrumental to nascent VoIP and VoIP failover technologies, helping to position Cisco as number-one provider of enterprise voice. Internet transport expert. Major liaison between key internal teams, external standards and university research (e.g., Stanford). Co-author of PR-SCTP (IETF RFC 3758).

Additional Relevant Experience

Voxware, Princeton, NJ

Chief Telephony Technologist for VoIP Startup (C-suite). Instrumental to successful IPO.

Telcordia / Bellcore / Bell Labs, Navesink, NJ / Morristown, NJ / Whippany NJ

Applied Research Manager: Internet Telephony. Presented at many leading research labs.

Director: Network Analysis and Characterization. Telco C-Suite readout responsibility.

District Manager and MTS: Co-invented and prototyped DSL line codes.

Education

Udacity Nanodegree: Artificial Intelligence and Specializations - July 2018

Rutgers University: Doctor of Philosophy (Ph.D. in Speech Signal Processing) – Jan 1994

Cornell University: Master in Engineering (M.Eng.)

Rutgers University: Bachelors in Electrical Engineering (B.S.E.E.)

Awards & Special Skills

- Awards: 2021 IEEE Region 3 Outstanding Engineer Award, Cisco Pioneer Award finalist, Bellcore Award of Excellence winner, Bellcore Presidents Award winner. Fifty-nine issued US patents. Major author in IETF, ITU-T, ETSI standards.
- Python and AI Framework (Keras, TensorFlow) in both 1-D (RNNs) and 2-DD (CNNs).
- MATLAB expert, MATLAB to C, Unix/PowerShell scripting. AWS experience (S3, EC2, etc.).
- University/Industry/Professional: IEEE Sig Proc Chair and Blockchain Community Chair (FWCS). Rutgers University CAIP Fellow. ICC TPC Vice-Chair, and Globecom TPC. Research outreach for Stanford, UT Dallas, Rutgers, USF, UCF, UND, & Cleveland State.
- Moderator in many standards bodies (ITU-T, ANSI Committee T1, IMTC / VoIP Forum).
- Wharton Business School Executive Program coursework. Public media training.