Bharath Keshavamurthy

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# Summary

The objective of my life is to pursue state-of-the-art research in the arena of Electrical and Computer Engineering and strive to facilitate significant contributions to Science and Technology.Having an optimum level of understanding in the end-to-end development of communication & networking technologies, I hope to achieve path-breaking success and in doing so, solve some of the greatest problems plaguing mankind today such as Climate Change, Global Conflicts, Public Safety, and the need for Sustainable Development.

# Experience

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| **Research Assistant, NSF EARS Grant, Communications Research Lab, Purdue University** [Oct 2020 - Present]  Stochastic modeling of communication networks | mmWave Propagation Modeling | UAV Trajectory Optimization  **Research Assistant, DARPA Make-It Grant, Bindley Bioscience Center, Purdue University** [Jan 2020 – Oct 2020]  High-throughput analytics | Structure elucidation via VAEs | Intelligent Reaction Preparation via RL | Visualization  **Research Assistant, DARPA SC2 Grant, Communications Research Lab, Purdue University** [Aug 2018 – Dec 2019]  DARPA Spectrum Collaboration Challenge | Intelligent Spectrum Sensing and Access via Approximate POMDPs  **Graduate Engineering Intern, DC NX-OS Platform, CISCO,** San Jose, CA, USA [May 2019 - Aug 2019]  A.I. models in the CISCO Nexus data center product portfolio: RNNs | DL classifiers | Sensitivity analyses | A3C DDPG |  |
| **Senior Engineer, Digital Operations R&D, NOKIA**, Bangalore, KA, India [June 2016 - July 2018]  Software development | DevOps | Correlated reasoning ML | Computer networking | Telecommunications R&D |  |
| **Networking Intern, Ericsson India Global Services Pvt. Ltd**, Bangalore, KA, India [Feb 2016 - July 2016]  Cell planning | Network deployment & optimization | SONs | HETNETs | Small cells |  |
| **Intern, MCSRDC, Hindustan Aeronautics Limited**, Bangalore, KA, India [July 2015 - Aug 2015]  ATC Transponder for SSR with encoding altimeter and SLS | Aircraft navigation, communication, and combat systems |  |

# Education

**Doctor of Philosophy, Electrical and Computer Engineering**, 3.85/4.0, Purdue University [Jun 2020 – Present]

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| **Master of Science, Electrical and Computer Engineering**, 3.65/4.0, Purdue University [Aug 2018 – May 2020] |
| **Bachelor of Engineering**, 9.61/10, BMS College of Engineering, Bangalore, India [Sept 2012 - June 2016] |
| **Pre-University**, 96.1%, New Horizon Pre-University College, Bangalore, India [June 2010 - Mar 2012] |
| **Matriculation** (10th Grade), 95%, St. Thomas Public School (ICSE), Bangalore, India [June 2009 - Mar 2010] |

# Major Projects

**Adaptive Multi-Scale Scheduling and Trajectory Design for Power-Constrained UAV Relays** [Jan 2021 – Present]

**28GHz Propagation Modeling in Urban and Suburban Radio Environments on NSF POWDER** [Oct 2020 – Present]

**Over-The-Air (CBRS) Operations of the BAM! Wireless DARPA SC2 Radio on NSF POWDER** [Mar 2021 – Present]

**Intelligent Spectrum Sensing and Access via Randomized Approximate POMDPs** [Aug 2018 – Apr 2021]

**High-Throughput Analytics and Structure Elucidation via DESI Mass Spectrometry** [Jan 2020 – Oct 2020]

**Multi-agent Swarm Optimization using e-puck2 robots in Fully Distributed Mesh WLANs** [Oct 2019 - Oct 2020]

**Purdue BAM! Wireless: DARPA Spectrum Collaboration Challenge (SC2) Cognitive Radio [**Aug 2018 - Nov 2019]

**A.I Models in the CISCO Nexus Data Center Networking Product Portfolio,** CISCO [May 2019 - Aug 2019]

**Cross-Layer Optimization in Decentralized Ad-hoc Cognitive Radio Networks** [Jan 2019 - May 2019]

**Automated Operations and Recovery (AOR)**, Digital Ops, Nokia Applications & Analytics [Jun 2016 – July 2018]

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| **IEEE 802.11af: A Hardware Platform to utilize the TV White Spaces in India**, BMSCE [Dec 2015 - Aug 2016]  **Full Custom Design of a sensor node for Industrial WSNs**, DRDO-BMSCE [Sept 2015 - May 2016] |
| **IC Design of an OFDM Transceiver Architecture for LTE Downlink,** BMSCE [July 2015 - Dec 2015] |
| Honors and Accomplishments **Nokia Applaud Excellence Award,** Excellence in field of work, hard work, and innovation, Nokia, Oct 2017   |  | | --- | | **Best Research Paper, 5th IEEE International Conference on Wireless Networks and Embedded Systems, Oct 2016** | | **Best Paper Presentation, 5th IEEE International Conference on Wireless Networks and Embedded Systems, Oct 2016**  **Best Research Paper, 4th National Conference on Networking, Embedded and Wireless Systems, June 2016** Publications **Learning-based Cognitive Radio Access via Randomized Point-based Approximate POMDPs**  Under Review at IEEE Transactions on Cognitive Communications and Networking (TCCN), 2021  **Learning-based Cognitive Radio Access via Randomized Point-based Approximate POMDPs**  IEEE ComSoc International Conference on Communications (ICC), 2021   |  | | --- | | **VLSI implementation of a novel sensor architecture for Industrial Wireless Sensor Networks**  **2016 IEEE International Conference on Computational Intelligence and Computing Research (ICCIC), 2016** | | **Conceptual Design of Proactive SONs based on the Big Data Framework for 5G Cellular Networks**  **5th IEEE International Conference on System Modeling & Advancement in Research Trends (SMART), 2016** | | **Communication System Design for White-Fi (802.11af)**  **10th IEEE ComSoc International Conference on Advanced Networks and Telecommunication Systems (ANTS), 2016** | | **Hardware-in-Loop simulation of a White-Fi system utilizing the TV White Spaces in India**  **5th IEEE International Conference on Wireless Networks and Embedded Systems (WECON), 2016** | | **Feasibility Analysis of a Super Wi-Fi Network for Rural Broadband Deployment in India**  **4th National Conference on Networking, Embedded and Wireless Systems, 2016** | | |  | |
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