Sunay Bhat

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EDUCATION AND RESEARCH

University of California, Los Angeles **Los Angeles, CA**

Electrical and Computer Engineering MS/Ph.D. Student *September 2020 – Present*

- Masters in progress (June 2021) in Signals and Systems area with a focus on Optimization, Information Theory, Networks, and Control Theory
- Research areas include: Reinforcement Learning, Casual Inference, Transfer Learning, Game Theory, and Controls Optimization with a focus on human-machine interfaces to improve student educational outcomes and concept comprehension with Artificial Intelligence (AI) algorithms
- Department fellowship recipient for 2020/2021 academic year requiring high academic performance

University of Tennessee, Knoxville (UTK) **Knoxville, TN**

B.S. in Electrical and Computer Engineering, Summa Cum Laude *May 2017*

Part-Time Research Assistant for UTK Nonwovens Research Laboratory *August 2014 – May 2016*

- Evaluated conductivity of carbon nanotube (CNT) yarns and graphene reinforced polymeric fibers for potential applications in fiber-based circuit design

INDUSTRY EXPERIENCE

Lockheed Martin - Santa Barbara Focalplane **Goleta, CA**

Electro - Optical Systems Engineer *June 2019 – September 2020*

- Directed technical operations as lead engineer on site's largest production program in the manufacturing of cryo-cooled, mid-wave infrared photodetector systems
- Lead implementation effort for cutting-edge detector material including the development of test methodology, radiometric characterization, semiconductor processing, and defect mitigation in order to meet major site milestone and cost savings initiatives
- Submitted multiple engineering notebooks and white papers for review researching process improvements, system characterization methods, and image processing algorithms
- Managed and trained a team of 8+ engineers across all technical projects, production support, and cross-site engineering efforts

Test and Systems Integration Engineering Associate *September 2017 – May 2019*

- Worked extensively in infrared detector testing, radiometric characterizations, and production support with focal plane arrays in cryo-cooled systems
- Led three initiatives investigating wafer processing steps resulting in process improvements to mitigate or eliminate defects during detector fabrication steps
- Created an interactive radiometry algorithm glossary and detector defect glossary to centralize site research and documentation for both management and new engineers
- Completed cost-savings packages to improve yields of final product, including a customer test-requirement change which was based on an in-depth analysis of unnecessary specifications

Red Ribbon Recruiting, LLC , Co-Founder - Los Angeles, CA *September 2018 – January 2020*

- Analyzing competition data to deliver advanced evaluation tools and interactive reports on team performance and scoring opportunities for collegiate coaching programs
- Identifying recruiting opportunities for coaches using predictive models and algorithms

Nano Terra Inc., Electrical Engineering Intern - Cambridge, MA *June 2016 – August 2016*

- Designed and prototyped an embedded system chemical sensor using PCB CAD tools and C++ software resulting in an order of magnitude increase in data transmission rates

Oak Ridge National Laboratory, Research Assistant - Oak Ridge, TN *July 2014 – August 2014*

- Assisted research with 3-D printers on graded composition microstructure as a function of thermal cycling

TECHNICAL SKILLS QUALIFICATIONS

Clearances and Certifications

- Active *Secret* Security Clearance (from September 2018)

Programming and Software

- Expert: Python (machine learning, data analytics, graph theory), MATLAB (radiometric calculations, data analysis, production instrument control, machine learning)
- Advanced: R (graph theory, data analytics), C++ (embedded systems, coursework), Atlassian (Jira, Confluence, Bitbucket), Microsoft Office (engineering notebooks, critical program and design reviews, production test procedures)

Hardware

- Extensive troubleshooting and support of test hardware including power supplies/analyzers, Digital Multi-meters, wafer probers, environmental stress screening equipment, etc.
- Soldering, PCB design, basic IC design, embedded systems development, serial/GPIB communications
- Industry and academic lab experience with clean rooms, microscopes, machining tools, sample prep, etc.

HONORS/LEADERSHIP/COMMUNITY

- STEM Solutions Policy Proposal, Semi-Finalist (policy co-Author for CA legislator) *2021*
- Mentor and volunteer for non-profit organizations Chibo and T'ena Foundation *January 2020- Present*
- Organized annual Engineering Week involving multiple STEM outreach events at local schools and universities for Santa Barbara Lockheed Martin site *2018*
- Lockheed Martin Performance Excellence annual award recipient *2018*
- UTK Student Athlete on Varsity Tennis Team *2013-2017*
  - Team Captain *2016-2017*
  - Four-Time SEC and ITA Scholar Athlete Award *2013-2017*
  - NCAA 'Sweet Sixteen' Team Appearance *2014*
- UTK Chancellor's Honors for Outstanding Academic Achievement and Scholar Athlete *2017*
- Member of Student-Athlete Advisory Committee with 50+ hours of community service *2015-2017*

PUBLICATIONS

Azari, H., Bhat, G., Hiremath, N. **Bhat, S.** (2017) Structure and Properties of Polypropylene Graphene Composite Filaments. *Proceedings of the Fiber Society 2017 Fall Meeting and Technical Conference*, Athens, GA (November 2017).