Sunay Bhat

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EDUCATION AND RESEARCH

University of California, Los Angeles   **Los Angeles, CA**
Electrical and Computer Engineering M.S./Ph.D. Student   *09/2020 – Expected: 05/2024*

- Research focus in Reinforcement Learning with Causal Inference and Structural Modeling to develop interpretable and generalizable Machine Learning models
- M.S. acquired June 2021 in Signals and Systems area with a project on Reinforcement Learning with Minimal Causal Models in two-player, zero-sum games
- Department fellowship recipient for 2020/2021 academic year requiring high academic performance

Relevant Coursework (and Projects)

- Reinforcement Learning (Double-Cart Pole Deep Q-Learning)
- Large-Scale Social and Complex Networks (Inverse RL, Network Analysis, Recommender Systems)
- Information Theory (Source Coding)
- Digital Speech Processing (Speaker Recognition AI)
- Linear Programming (Linear Classifiers, SVM)
- Convex Optimization

University of Tennessee, Knoxville (UTK)   **Knoxville, TN**
B.S. in Electrical and Computer Engineering, Summa Cum Laude   *08/2013 – 05/2017*

- Focus area in embedded systems design, signal processing, and controls
- UTK Chancellor's Honors for Outstanding Academic Achievement and Scholar Athlete
- Part-Time Research Assistant for UTK Nonwovens Research Laboratory evaluating conductivity of carbon nanotube (CNT) yarns and graphene reinforced polymeric fibers

INDUSTRY EXPERIENCE

Lockheed Martin - Santa Barbara Focalplane   **Goleta, CA**
Electro - Optical Systems Engineer   *06/2019 – 09/2020*

- Directed technical operations as lead engineer on site's largest production program manufacturing cryo-cooled, mid-wave infrared photodetector systems
- Led site-milestone effort to implement cutting-edge detector material through the development of test methodology, radiometric characterization, semiconductor processing, and defect mitigation
- 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 on program production support and R&D initiatives

Test and Systems Integration Engineering Associate   *09/2017 – 05/2019*

- Analyzed radiometric and system performance data for infrared detectors at various assembly levels and provided production support for focal plane arrays in cryo-cooled systems
- Guided wafer process improvement initiatives to eliminate defects during detector fabrication
- Created an interactive radiometry algorithm and detector defect glossary to centralize site research
- Completed cost-savings packages to improve yields and remove unnecessary specifications

Red Ribbon Recruiting, LLC, *Co-Founder* **- Los Angeles, CA**   *09/2018 – 01/2020*
- Analyzed competition data to deliver advanced evaluation tools and interactive reports on team performance and scoring opportunities for collegiate coaching programs
- Identified recruiting opportunities for coaches using predictive models and algorithms

Nano Terra Inc., *Electrical Engineering Intern* **- Cambridge, MA**   *06/2016 – 08/2016*
- 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**   *07/2014 – 08/2014*
- Assisted research with 3-D printers on graded composition microstructure as a function of thermal cycling

ADDITIONAL EXPERIENCE AND SKILLS

Writing
- Regular contributor to the WSJ 'Future View' student opinions section (4 published as of Sept 2021)
- Active writer of Machine Learning, Data Science, and probability articles on Medium

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

Software and Hardware
- Python (machine learning, data analytics, graph theory), MATLAB (radiometry, data analysis, instrument control, machine learning), R (graph computation, data analytics), HTML/CSS (web-development), C++ (embedded systems, coursework)
- Clean rooms, power supplies/analyzers, DMMs, wafer probers, radiometry and optics equipment

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   *2020- Current*
- Organized Lockheed Engineering Week with multiple STEM community events   *2018*
- Lockheed Martin Performance Excellence annual award recipient   *2018*
- UTK Student Athlete and Team Captain on Varsity Tennis Team   *2013-2017*
- Member of Student-Athlete Advisory Committee with 100+ 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).

ANTI-RESUME

An abbreviated list of relevant skills or experience I wish I was better at…for the sake of intellectual honesty

- Big O and Computational Efficiency – Not a software engineer by training, never liked code optimization
- Publishing History – Working on it, targeting a few meaningful manuscripts over quantity
- Mathematical Proofs – Find it beautiful to see complex proofs derived, not my strong suit to develop proofs
- UI/UX Design – Never designed a user-interface for a consumer product
- Code Commenting and Style – Can comment well if forced, used camelCase in python for years
- Document formatting – It's a wonder I got this resume thing to work