NICHOLAS R. DAVID

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EXPERIENCE

Ph.D. Pre-Candidate

Sun Group @ University of Michigan

🛗 Aug 2022 - Now

Ann Arbor, MI

 Developing new, data driven predictive theory of inorganic materials synthesis through Bayesian methods

+1 203-501-0975

- Machine-processing over 300,000 graduate applications for improving diversity, equity, and inclusion using large language models
- Constructing high dimensional, free energy surfaces from materials properties

Undergraduate Research

Rollett Group @ Carnegie Mellon University

🛗 Aug 2021 - May 2022

Pittsburgh, PA

- Implemented two materials science word2vec models for classifying abstracts' relevancy to superalloys
- Utilized unsupervised learning algorithms, t-SNE and UMAP, to understand hidden structures within gathered abstracts
- Fine-tuned a pre-trained materials science BERT language model for abstract classification
- Data mined over 50,000 materials science abstracts for training a multiclass classifier

Undergraduate Research Fellowship

LIQUID Group @ Carnegie Mellon University

🛗 Aug 2020 – May 2022

9 Pittsburgh, PA

- Synthesized thin film heterostructures using molecular beam epitaxy (MBE) for potential electronic applications
- Characterized thin films using XRD & AFM
- Fabricated shutter & motor boxes for the automation of lab equipment through LabView
- Disseminated work at American Physcial Society (APS) March Meeting 2022

Software Test Engineer

Pitney Bowes

🛗 Jun 2019 – Aug 2019

♀ Shelton, CT

- Tested and programmed the mailing application for Sendpro^TM sending device

- Updated deprecated libraries in Android Studio to streamline custom android widgets
- Compiled test reports and analyzed errors to be remedied

Cybersecurity Intern

IBM

🛗 May 2018 – Jul 2018

Armonk, NY

- Analyzed penetration reports and developed multifaceted techniques to protect the companies crown jewel data
- Tested encryption software to be used by 300,000+ employees and 25,000+ customers
- Compiled and presented methodologies to protect internet facing applications to VP of Enterprise and Technology & Security

🗞 nrdavid.github.io 💦 🗘 Upon Request

EDUCATION

B.S. Materials Science Engineering Additional Major Applied Physics

Carnegie Mellon University

May 2022 ♀ Pittsburgh, PA

• 3.72/4.0 GPA | University Honors

High School Diploma

Ridgefield High School

- In Graduated Jun 2018 ♀ Ridgefield, CT
- 4.5/4.5 GPA | High Honors

PUBLICATIONS

 David, N., Sun, W. & Coley, C.W. The promise and pitfalls of AI for molecular and materials synthesis. Nat Comput Sci 3, 362–364 (2023). https://doi.org/10.1038/s43588-023-00446-x

PROGRAMMING

NumPy scikit-learn Pa	ndas
Transformers TensorFlow	PyTorch
Materials Project	

COURSEWORK

Machine Learning	Algorithms
Bayesian Statistics	
Natural Language Pr	rocessing
Solid-state Physics	Thermodynamics
Kinetics	

INTERESTS

Computational Materials Science		
Material	s Synthesis	Data Science
Soccer Cooking Travel		

Ann Arbor, MI, USA