SKANDAN CHANDRASEKAR

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SKILLS

- Proficient in: COMSOL Multiphysics (RF Module), Python, Lumerical FDTD and INTERCONNECT, Vienna Ab-Initio Simulation Package (VASP), Solidworks
- Familiar with: MATLAB, Linux Bash commands, usage of HPC clusters
- Excellent communication skills demonstrated through multiple publications and conference poster presentations
- Excellent teamwork and critical thinking skills demonstrated through 2+ years of research experience

RESEARCH EXPERIENCE

Undergraduate Researcher, CamachoLab

March 2022 – Present BYU, Provo, Utah, USA

- Co-developing Python modules (Simphony and SiPANN) for Silicon Photonic Integrated Circuits (PICs) simulations using Numpy, Scipy, and Tensorflow
- Incorporating manufacturing variations-aware design in Monte-Carlo simulations using in-house and previously designed methods
- Trained an Artificial Neural Network to develop Process Design Kits for Silicon Nitride photonic components
- Top contributor to open-source package for Silicon Photonics foundry simulations gdsfactory

Undergraduate Researcher, Xin Group

October 2021 – December 2021 Virginia Tech, Virginia, USA

- Led a research project to design efficient and cost-effective nanomaterials for catalysis reactions
- Computed adsorption energies of adsorbates on d-block element surfaces to screen for suitable catalyst materials
- Ran Nudged Elastic Band calculations to find transition states of potential reaction pathways

Undergraduate Research Assistant, Klinkova Lab

December 2019 – April 2021 University of Waterloo, Ontario

- Designed and optimized simulation schemes and automated simulations using Lumerical's Python API
- Calculated properties of plasmonic nanoparticles using Lumerical FDTD and COMSOL's RF Module
- Held workshop for other project members on usage of Lumerical FDTD

PUBLICATIONS

Li, F., Medvedeva, X.V., Medvedev, J.J. et al. Interplay of electrochemical and electrical effects induces structural transformations in electrocatalysts. Nat Catal (2021). https://doi.org/10.1038/s41929-021-00624-y

Feng Li et al 2022 Nanotechnology 33 125203

PROJECTS

Simple 2D-FDTD code in MATLAB

- Wrote a MATLAB script to obtain movies of E field profiles of simple-shaped nanoparticles in the 2-D domain using Finite-Difference Time-Doman method

EDUCATION

BASc Honors in Nanotechnology Engineering, University of Waterloo, September 2018 – Present