

# SKANDAN CHANDRASEKAR

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https://github.com/SkandanC

## SKILLS

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- 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

## RESEARCH EXPERIENCE

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### Undergraduate Researcher, CamachoLab

March 2022 – Present

BYU, Provo, Utah, USA

- Co-developing Python modules ([Simphony](#) and [SiPANN](#)) for Silicon Photonic Circuits (PICs) simulations using Numpy and Scipy
- Incorporating manufacturing variations-aware design in Monte-Carlo simulations using in-house and previously designed methods
- Bug fixing and updating Python libraries to work with the latest versions of each other
- Top contributor to open-source package [gdsfactory](#) for the Simphony plugin

### 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

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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

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### 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 FDTD

## EDUCATION

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BASc Honors in Nanotechnology Engineering, University of Waterloo, September 2019 – Present