Rahul Jaiswal

Ph.D. candidate & Graduate Assistant at UNM

Albuquerque, USA
** Willing to relocate
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SKILL-SET

Device Characterization: ECV profiling, Optical measurements (ellipsometry, spectrophotometry, photoluminescence imaging), QSSPC measurement and current voltage profiling using sun simulator.

EDA, TCAD and application specific Simulation Tools: Sentaurus TCAD (Optical & electrical simulation, process simulation), Cadence, LTSpice, Silvaco, PC1D, Griddler.

Semiconductor Fabrication: Oxidation, Diffusion, Lithography, Metallization, Screen printing, Etching

Programming: Python (Gpytorch, Scikit-learn, Flask, Tkinter), Mathematica, HTML, CSS, TCL scripting.

Miscellaneous: Microsoft office, Linux (Debian), IoT prototyping (Arduino, & Raspberry Pi), Buildroot image development, AWS deployment.

WORK EXPERIENCE

Graduate Assistant: University of New Mexico (50% capacity) 01/2019 – Current
- Solar cell characterization, simulation, device modelling and machine learning model development at CHTM, Albuquerque.
- Academic contributions to journals and conferences
- UNM student liaison for QESST.

Research Assistant: Solar Energy Research Inst. of Singapore (100% capacity) 03/2017 – 12/2018
- Project member for XSolar-Hetero Project, an online web-based solar cell simulation interface (http://xsolar-hetero.sg).
- Team lead for device modelling, simulation & characterization of solar cells.
- Support for development of simulation web-services (REST-API's) deliverables.
- Trained on semiconductor characterization tools and responsible for data acquisition.

Research intern: Solar Energy Research Inst. of Singapore (NUS, 100% capacity) 01/2016– 12/2016
- Internship project: Development of a weather reporting station prototype using open-source hardware and software.
- Team member for solar irradiance forecasting and solar irradiance data analysis.

EDUCATION

Doctor of Philosophy: Electrical Engineering | University of New Mexico | 01/19 – 10/22 | GPA 4.01
Master of Science: Electrical Engineering | University of New Mexico | 01/19 – 07/20 | GPA 4.02
Master of Engineering: Microelectronics | BITS Pilani (India) | 08/14 – 05/16 | 7.38 /10
Bachelor of Technology: Electronics Engineering | UPTU (India) | 08/10 – 06/14 | 73.7 %

Academic Contributions

- Jaiswal, R., Martínez-Ramón, M., & Busani, T. (2021, June 26). **Probabilistic analysis of solar cell optical performance using Gaussian processes**. arXiv.org. https://arxiv.org/abs/2107.07342v1. (Accepted conditionally at IEEE-JPV)
- R. Jaiswal, M. Martinez-Ramon and T. Busani, "Hierarchical optimization of photovoltaic device performance using machine learning," 2021 IEEE 48th Photovoltaic Specialists Conference (PVSC), 2021, pp. 2368-2371, doi: 10.1109/PVSC43889.2021.9518981.
- Wolfram Technology Conference 2018 - **Link to presentation video**
  Champaign, IL 16 Oct 2018 - **Online Photovoltaic simulation platform using web-Mathematica**
- R. Stangl et al., "**Developing a web-based PV simulation platform (targeting at machine learning combined with advanced device and process simulation to support process optimization)**," 2019 IEEE 46th Photovoltaic Specialists Conference (PVSC), Chicago, IL, USA, 2019, pp. 3051-3053.