Rahul Jaiswal

Ph.D. candidate with professional R&D experience

📍 Albuquerque, USA
** Willing to relocate
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https://rahul17455.github.io/portfolio/

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

ACADEMIC

Graduate Assistant: University of New Mexico - *Albuquerque* (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

PROFESSIONAL

AI systems Engineer: AgShift - *Albuquerque* (Internship)   02/2022 – Current
- Hardware design and support to AI (Artificial Intelligence) and software team.
- Design of camera drivers, circuitry, and lightning constructs

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).
- Device modelling, simulation, and characterization of solar cells.
- Development of simulation web-services (REST-API's) deliverables

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 – 12/22	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

- **R. Jaiswal**, M. Martínez-Ramón and T. Busani, "Probabilistic Analysis of Solar Cell Performance Using Gaussian Processes," in IEEE Journal of Photovoltaics, vol. 12, no. 2, pp. 652-658, March 2022, doi: 10.1109/JPHOTOV.2022.3143457.
- **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:** 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.