

Kavin Manickaraj

Engineer with 7 years of experience with energy efficiency and renewables

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EDUCATION

- **Georgia Institute of Technology** Atlanta, GA
 - M.S. Mechanical Engineering; High Honors Aug 2011 - May 2015
 - B.S. Mechanical Engineering; Highest Honors; Co-op Program Aug 2006 - May 2011

SKILLS

- **Computer Languages:** Python, MATLAB, SQL, Javascript, L^AT_EX, C++
- **Machine Learning Frameworks:** Scikit-learn, XGBoost, Tensorflow, Keras
- **Data Analysis:** Python libraries including: Pandas, SciPy, Matplotlib, Seaborn; Microsoft Excel; OriginPro
- **Engineering Tools:** AutoCAD, SolidWorks, COMSOL, Gambit, LabView
- **Thin-film manufacturing:** Electron-Beam, Ion-Assisted, and Chemical Vapor Deposition; Molecular Beam Epitaxy; RF/DC sputtering; Photolithography

EXPERIENCE

- **External Advisor** *McKinsey & Company, Atlanta, GA* Jan 2019 - Present
 - Worked with the partner-led Global Compensation team to produce data-driven solutions for an international compensation standard.
 - Developed custom models using regression and classification techniques on market data for over fifty countries.
 - Created a novel compensation strategy and presented directly to Senior Partner leadership.
- **Senior Project Manager** *Tribal Energy, Atlanta, GA* May 2018 - Nov 2018
 - Worked with the Native American Venture Fund to start a solar distribution company that partners with Native American Tribes to strategically implement utility-scale solar projects.
 - Assisted with developing necessary work-flows between international solar manufacturers, U.S. Customs and Border Protection, and domestic customers.
- **Project Engineer** *Research & Incubation, Southface, Atlanta, GA* Aug 2015 - May 2018
 - Led a Building America/DOE research grant focused on next-generation smart ventilation and its effect on indoor air quality.
 - Built and developed low-cost indoor air quality sensors on a C++ platform, partnered with an industry specialist to scale them with mesh-network protocols, and utilized MATLAB and OriginPro to analyze collected data.
 - Co-authored a white paper investigating solar production and financing for non-profit organizations in Georgia.
 - Developed solar electricity rate calculators for small commercial buildings under various Georgia EMC tariffs.
 - Performed ASHRAE Level II energy audits for small commercial buildings.
 - Created and tested building performance and energy code calculators built on an Excel platform.
- **Graduate Research Assistant** *Nanolab, Georgia Tech Research Institute, Atlanta, GA* Jan 2012 - May 2015
 - Developed copper zinc tin sulfide (CZTS) solar cells in planar and three-dimensional configurations using various deposition techniques to be tested in both terrestrial and space environments.
 - * Cells were tested on-board the International Space Station beginning January 2016 and returned May 2018.
 - Developed CdTe quantum dot (QD) nanocomposites for alpha-particle radiation detection as an alternative to conventional single-crystal scintillators by incorporating QDs in silica sol-gels and polymer matrices.

CERTIFICATES

- **Coursera:** Machine Learning
- **Deeplearning.ai:** Neural Networks and Deep Learning, Improving Deep Neural Networks, Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models

PUBLICATIONS

- K. Manickaraj, B. K. Wagner, and Z. Kang, "Radiation detection with CdTe quantum dots in sol-gel glass and polymer nanocomposites," Proc. SPIE, vol. 8725, p. 87252L–87252L–7, 2013.
- M. Redmond, K. Manickaraj, O. Sullivan, S. Mukhopadhyay, and S. Kumar, "Hotspot cooling in stacked chips using thermoelectric coolers," IEEE Trans. Components, Packag. Manuf. Technol., vol. 3, no. 5, pp. 759–767, 2013.