Sanjana Kunkolienkar

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Objective Statement

Ph.D. student in the Power and Energy group at Texas A&M University working on studying power grid characteristics and modeling large-scale realistic synthetic electric grids.

Education

- Ph.D., Electrical and Computer Engineering, Texas A&M University at College Station, expected May 2026.
  Current GPA: 4.0.
  Dissertation Topic: TBD.
- Bachelor of Technology, Electrical Engineering, Mumbai University, May 2018.
  GPA: 8.92.

Experience

August 2021 - Present

Graduate Research Assistant
Energy and Power Research Group, Texas A&M University, Texas

Research

- Upgraded an existing 2016 synthetic grid to model the predicted load and renewable generation for the year 2030 for ARPA-E's GO Competition.
- Identified the impact of real-world power grid areas on Area Sparsity and implemented them in synthetic grids for transmission line planning.
- Performed transient studies on large-scale grids (WECC, EI & ERCOT synthetic cases) to understand the behavior of modes.

Teaching

- Teaching Assistant for course ECEN 615 – Elements of Power System Analysis, Fall 2022.
- Teaching Assistant for course ECEN 667 – Power System Dynamics and Stability, Fall 2023.
- Grader for course ECEN 215 - Principles of Electrical Engineering, Fall 2021.

May 2023 – August 2023

Power System Engineer, Intern
Electric Power Engineers, LLC – Transmission Planning Team, Texas

- Developed a tool using PSS/E and TARA python APIs to determine study area for generator interconnection studies that are based on network connectivity and sensitivity.
- Consolidated Generic Transmission Constraints (GTCs) information released by ERCOT for engineer use.

July 2018 – May 2021

Technical Professional
Siemens Ltd., India

- Collaborated with respective departments and managed timelines at different stages of switchboard manufacturing.
- Reported technical specifications between cross-functional teams: sales, manufacturing, procurement, testing & commissioning, and the customer (domestic and international).
- Handled key customers: Adani Wilmar Ltd. and Skoda Auto Volkswagen India Pvt. Ltd

Publications

Conference Presentations

- **S. Kunkolienkar**, N. Slavchev, F. Safdarian, T. Overbye, "Developing a Dashboard To Enhance Visualization of Similar Historical Weather Patterns and Renewable Energy Generation," *2024 IEEE Workshop on Energy Data Visualization (EnergyVis)*, Oct. 2024.
- **S. Kunkolienkar**, J. Cook, T. Overbye, "Visualizing Volt-Var Distributions in Large-Scale Electric Grid Models", *2024 56th North American Power Symposium (NAPS),* Oct. 2024.
- F. Safdarian, **S. Kunkolienkar**, J. Snodgrass, A. Birchfield, T. Overbye, "Creating a Portfolio of Large-Scale, High-Quality Synthetic Grids: A Case Study," *IEEE Kansas Power and Energy Conference 2024*, Apr. 2024.
- **S. Kunkolienkar**, F. Safdarian, J. Snodgrass, A. Birchfield, T. Overbye, "A Description of the Texas A&M University Electric Grid Test Case Repository for Power System Studies," *2024 IEEE Texas Power and Energy Conference*, College Station, TX, Feb. 2024.
- T.J. Overbye, **S. Kunkolienkar**, F. Safdarian, A. Birchfield, "On the Existence of Dominant Inter-Area Oscillation Modes in the North American Eastern Interconnect Stability Simulations," *57th Hawaii International Conference on System Sciences*, Honolulu, HI, Jan. 2024.
- E. Ekeruche, **S. Kunkolienkar**, J. Snodgrass, T.J. Overbye, "Undergraduate Research on Improving Power Grid Planning Models", *2023 North American Power Symposium*, Asheville, NC, Oct. 2023.
- F. A. Fru, S. C. Peres, T. Overbye, W. Jang, J. Chen, H. Mbayed, E. Keller, J. J. K, **S. Kunkolienkar**, and K. Ivey, "Pedagogical Application of Visualization and Eye Tracking For Electrical Grid Management," *International Conference on Applied Human Factors and Ergonomics (AHFE)*, San Francisco, CA, Jul. 2023.
- **S. Kunkolienkar**, F. Safdarian, J. Snodgrass, T. J. Overbye, "Creating Active and Reactive Power Reserve Zones for Large-Scale Electric Grids," *Kansas Power and Energy Conference 2023*, Virtual, Apr. 2023.
- **S. Kunkolienkar**, F. Safdarian, J. Snodgrass, T. J. Overbye, "Quantification of Area Sparsity in Large-Scale Electric Grids," *Kansas Power and Energy Conference 2023*, Virtual, Apr. 2023.

Professional Memberships and Activities

Professional Societies

- IEEE, Graduate Student Member, January 2021 – Present
- IEEE Power and Energy Society, Graduate Student Member, January 2021 - Present
- IEEE Young Professionals, Graduate Student Member, January 2021 - Present
- IEEE Women in Engineering, Graduate Student Member, January 2021 – Present
- IEEE PES-IAS-PELS TAMU Joint Student Chapter, General Officer, August 2022 - Present

Honors and Awards

- Thomas W. Powell'62 and Powell Industries Inc. Fellowship, 2024-2025.
- Thomas W. Powell'62 and Powell Industries Inc. Fellowship, 2023-2024.
- Thomas W. Powell'62 and Powell Industries Inc. Fellowship, 2022-2023.
- Best Intern Presentation on "Improving for Tomorrow" Scholarship, Electrical Power Engineers, 2023.
- Graduate Research Assistantship, Department of Electrical and Computer Engineering, Texas A&M University, 2021-Present.
- Department of Electrical and Computer Engineering Scholarship, Texas A&M University, 2021.

Volunteer Activities

- Chair for Women in IEEE Org, 2024-current.
- Logistics Executive for Grad Camp, Graduate and Professional Student Government, 2024.
- Co-director of the Texas Power and Energy Conference, 2024.
- Logistics Chair of the Texas Power and Energy Conference, 2023.
- Technical Chair of the Texas Power and Energy Conference, 2022.
- Vice President of the Editorial team in the Indian Graduate Student Association, 2021-2023.
- Presenter for the social awareness program 'Nurturing Intelligence in Curious Engineers,' Institution of Engineering Technology, 2017.