Dr. Gokhan Mert Yagli
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Dr. Gokhan Mert Yagli

CAREER HISTORY

Solar Energy Research Institute of Singapore (SERIS) **Dec 2021 – Present**
Research fellow, Team lead
Roles & Responsibilities:

- Designed, developed, and implemented state-of-the-art, production-level solar forecasting software in Python. This software assists power system operators in achieving more efficient grid integration and operations.
- Managing the solar forecasting research
- Managing Asia-Pacific and Singapore solar forecasting products and their roadmaps.
- Leading a team of engineers.
- Managed and delivered various scientific project deliverables and applications.
- Experienced with single and multidimensional temporal and spatial data, such as time-series data, numerical weather predictions, and satellite imagery.
- Proficient and experienced in product management, data science, machine learning, statistics, Python, and R programming languages.
- Mentored junior team members.
- Published multiple research articles in high-impact scientific journals and delivered talks at scientific conferences.

Singapore Institute of Manufacturing Technology **Apr 2021 – Dec 2021**
Scientist
Roles & Responsibilities:

- One of the main research collaborators in an industrial project on multi-site inventory positioning for manufacturing companies.
- Designed and developed an advanced artificial-intelligence-based material demand forecasting tool in R.
- The technology was successfully validated using the real data from a Singaporean enterprise on the industry of packaging printing.
- Contributed various project proposals.

National University of Singapore **Aug 2016 – Apr 2021**
Scientist Aug 2020 – Apr 2021
Roles & Responsibilities:

- Main research collaborators in the AI-based automated demand side management solution for optimal energy management of commercial and industrial scale systems project in collaboration with a startup.
- Designed, developed and implemented a solar forecasting tool in R programming language.
- Contributed development of electricity demand forecasting model.

- Supervised interns and engineers for scientific development and research.

Researcher Aug 2016 – Jul 2020

Roles & Responsibilities:

- Contributed to various aspects of solar forecasting and solar resource assessment, including but not limited to deterministic and probabilistic forecasting, parametric and nonparametric modelling, machine-learning, ensemble forecasting, spatial data analysis, and quality control for solar data.
- Published multiple high-impact scientific papers in international peer-reviewed journals.
- Completed various project deliverables.

Nokia, Istanbul **Apr 2014 – Jul 2016**

Kesir Engineering, Istanbul **Jan 2013 – Jul 2013**

ACADEMIC QUALIFICATIONS

National University of Singapore **Jul 2020**

PhD, Electrical and Computer Engineering

Thesis: Data-driven post-processing of ensemble solar forecasts for improved accuracy in solar forecasting.

Advisor: Prof. Dipti SRINIVASAN

Isik University, Turkey **2012**

BSc (Hons), Electrical and Electronics Engineering

OTHERS

Key Skills

- Problem solving
- Analytical thinking
- Research
- Product management
- Team leading
- Proactive
- Forecasting
- Grid integration
- Predictive modelling
- Python
- R programming
- Data science
- Data visualization
- Machine learning
- 3D and spatial data
- Satellite imagery
- Technical writing

Projects

- Lead, “Advanced real-time and operational solar power forecasting software tailored for the dynamic Asia Pacific region.” 10/2022–present.
- Scientist, “Advanced Solar Power Forecasting for Safe and Reliable PV Grid Integration in Singapore.” 12/2021–09/2022.
- Scientist, “Cyber Physical Production Systems.” 04/2021–12/2021.
- Scientist, “An AI-based automated demand side management solution for optimal energy management of commercial and industrial scale systems.” 08/2020–04/2021.

Awards

- Singapore International Graduate Award (SINGA) scholarship, National University of Singapore, 07/2016–07/2020.
- High Honor Student, Isik University (2012)
- Full scholarship, Isik University (2007)

Journal Publications

2024

- Song, Mengmeng, Dazhi Yang, Sebastian Lerch, Xiang’ao Xia, **Gokhan Mert Yagli**, Jamie M. Bright, Yanbo Shen, Bai Liu, Xingli Liu, and Martin János Mayer. "Non-crossing quantile regression neural network as a calibration tool for ensemble weather forecasts." Advances in Atmospheric Sciences (2024): 1-21.
- Gandhi, Oktoviano, Wenjie Zhang, Dhivya Sampath Kumar, Carlos D. Rodríguez-Gallegos, **Gokhan Mert Yagli**, Dazhi Yang, Thomas Reindl, and Dipti Srinivasan. "The value of solar forecasts and the cost of their errors: A review." Renewable and Sustainable Energy Reviews 189 (2024): 113915.

2023

- Liu, Bai, Dazhi Yang, Martin János Mayer, Carlos FM Coimbra, Jan Kleissl, Merlinde Kay, Wenting Wang, Jamie M Bright, Xiang’ao Xia, Xin Lv, Dipti Srinivasan, Yan Wu, Hans Georg Beyer, Gokhan Mert Yagli, Yanbo Shen. "Predictability and forecast skill of solar irradiance over the contiguous United States." Renewable and Sustainable Energy Reviews 182 (2023): 113359.

2022

- **Yagli, Gokhan Mert**, Dazhi Yang, and Dipti Srinivasan. “Ensemble Solar Forecasting and Post-Processing with Neighboring Satellite Pixels.” Renewable and Sustainable Energy Reviews 155 (2022): 111909.
- Yang, Dazhi, **Gokhan Mert Yagli**, and Dipti Srinivasan. "Sub-minute probabilistic solar forecasting for real-time stochastic simulations." Renewable and Sustainable Energy Reviews 153 (2022): 111736.

2021

- Yang, Xiaoyi, Dazhi Yang, Jamie M. Bright, **Gokhan Mert Yagli**, and Peng Wang. "On predictability of solar irradiance." Journal of Renewable and Sustainable Energy 13, no. 5 (2021).
- Yang, Dazhi, Weixing Li, **Gokhan Mert Yagli**, and Dipti Srinivasan. "Operational solar forecasting for grid integration: Standards, challenges, and outlook." Solar Energy 224 (2021): 930-937.
- Rodríguez-Gallegos, Carlos D., Lokesh Vinayagam, Oktoviano Gandhi, **Gokhan Mert Yagli**, Manuel S. Alvarez-Alvarado, Dipti Srinivasan, Thomas Reindl, and S. K. Panda. "Novel forecast-based dispatch strategy optimization for PV hybrid systems in real time." Energy 222 (2021): 119918.

2020

- **Yagli, Gokhan Mert**, Dazhi Yang, and Dipti Srinivasan. “Reconciling solar forecasts: Probabilistic forecasting with homoscedastic Gaussian errors on a geographical hierarchy.” Solar Energy 210 (2020): 59-67.
- **Yagli, Gokhan Mert**, Dazhi Yang, and Dipti Srinivasan. "Ensemble solar forecasting using data-driven models with probabilistic post-processing through GAMLSS." Solar Energy 208 (2020): 612-622.

- **Yagli, Gokhan Mert**, Dazhi Yang, Oktoviano Gandhi, and Dipti Srinivasan. “Can we justify producing univariate machine-learning forecasts with satellite-derived solar irradiance?” Applied Energy 259 (2020): 114122.
- Kumar, Dhivya Sampath, **Gokhan Mert Yagli**, Monika Kashyap, and Dipti Srinivasan. "Solar irradiance resource and forecasting: a comprehensive review." IET Renewable Power Generation 14, no. 10 (2020): 1641-1656.

2019

- **Yagli, Gokhan Mert**, Dazhi Yang, and Dipti Srinivasan. “Automatic hourly solar forecasting using machine learning models.” Renewable and Sustainable Energy Reviews 105 (2019): 487-498.
- **Yagli, Gokhan Mert**, Dazhi Yang, and Dipti Srinivasan. “Reconciling solar forecasts: Sequential reconciliation.” Solar Energy 179 (2019): 391-397.

Conference Publications

2019

- **Yagli, Gokhan Mert**, Joel Wei En Tay, and Dazhi Yang. "Ensemble kriging for environmental spatial processes." In 2019 IEEE International Conference on Big Data (Big Data), pp. 3947-3950. IEEE, 2019.

2018

- **Yagli, Gokhan Mert**, Dazhi Yang, and Dipti Srinivasan. "Solar forecast reconciliation and effects of improved base forecasts." In 2018 IEEE 7th World Conference on Photovoltaic Energy Conversion (WCPEC)(A Joint Conference of 45th IEEE PVSC, 28th PVSEC & 34th EU PVSEC), pp. 2719-2723. IEEE, 2018.
- **Yagli, Gokhan Mert**, Dazhi Yang, and Dipti Srinivasan. "Using combinational methods for forecast improvement in PV power plants." In 2018 IEEE Innovative Smart Grid Technologies-Asia (ISGT Asia), pp. 540-545. IEEE, 2018.
- Yang, Dazhi, **Gokhan Mert Yagli**, and Hao Quan. "Quality control for solar irradiance data." In 2018 IEEE Innovative Smart Grid Technologies-Asia (ISGT Asia), pp. 208-213. IEEE, 2018.