Muhammad Andy **PUTRATAMA**

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EDUCATION

September 2022 – October 2019 | **Ph.D. in Electrical Engineering (Power Systems)**
Université Grenoble Alpes, France

August 2018 – September 2016 | **M.Sc. in Electrical Engineering for Smart Grids**
Grenoble Institute of Technology (Grenoble INP), France

July 2016 – August 2012 | **B.Sc. in Electrical Power Engineering**
Institut Teknologi Bandung, Indonesia

WORK EXPERIENCE

Present – November 2022 | **MOBI Electromobility Research Centre** — Brussels, Belgium
Senior Researcher
- Research and investigation of emerging energy markets, e-mobility management (electric vehicles) and optimal design and management of new and renewable energy systems.
- Led and Coordinated national and international research projects in the field of power and energy systems.
- Led an international research consortium and partnered with academics, research institutes, industries and NGOs.
- Contributed on funding acquisitions, research proposal writings and project tenders.
- Supervised researchers and engineers in an interdisciplinary team that focuses on research & development of design, management and AI for energy and e-mobility systems.
- Scientific dissemination : workshops, seminars, and publication in international journals and conferences.

October 2022 – October 2019 | **Grenoble Electrical Engineering Laboratory (G2ELab)** — Grenoble, France
Research & Development Engineer
- Developed optimization strategies for operation and planning of distributed renewable energy resources in smart distribution power systems.
- Modelling and simulation of energy management at the scale of consumers, networks and markets.
- Research on distributed optimal power flow and *peer-to-peer* local energy markets to increase reliability, scalability and economic operation of community distribution grids and microgrids.
- Collaborated with a French start-up in developing management strategy for French energy communities.

April 2019 – September 2018 | **Schneider Electric** — Montbonnot-Saint-Martin, France
Power System Engineer for Solar and Storage Systems
- Led Power Plant Controller (PPC) development in 2 $\times$300 MW utility solar plant projects.
- Assisted sales engineers and provided technical support to calls for projects.
- Conducted power system modelling and simulations to evaluate the feasibility of utility-scale solar photovoltaic projects under normal & abnormal operating scenarios .
- Implemented PCC algorithms tailored to clients' requirements.
- Analyzed and evaluated worldwide grid codes for continuous development of Schneider's PPC.
- Provided technical supports and trainings to external stakeholders and clients.

August 2018 – March 2018 | **Schneider Electric** — Grenoble, France
Microgrid Project Engineer
- Reviewed and analized global microgrid market trends.
- Drafted marketing and technical specifications of Schneider's microgrid controller solution for power management system (PMS).
- Acted as one of the main engineers for developing and prototyping Schneider's PMS.

August 2017 – June 2017 | **Schneider Electric** | Grenoble, France
PV solution Architect Intern
- Collaborated with a team of engineers to provide technical solutions based on clients' needs.
- Delivered trainings on power system simulation softwares to engineering team.

June 2017 – May 2016 | **Winvi Dwi Energy** | Jakarta, Indonesia (Remote)
Power System Consultant
- Conducted small renewable-based power plant (< 10 MW) integration studies.
- Presented reports and provided technical advices to Indonesian electric utility company.

Relevant Projects

WIMBY - Wind In My Backyard (Horizon Europe Research & Innovation) 2023 - Present

www.wimby.eu

The main objective of this project is to mitigate the "Not in my backyard" (NIMBY) syndrome by performing holistic modelling of wind power installations in Europe. I am acted as the technical project coordinator of the project and work package leaders related to wind power modelling and life cycle assessments.

ECOFLEX - Ecosystem to Leverage Flexibility from Energy Assets for Grid and Energy Balancing 2022 - Present

www.ecoflex-project.be

ECOFLEX is a Belgian-Flemish project that aims to enable flexibility valorization of prosumers and small-scale distributed energy resources into existing and future energy sytems and markets. In this project, I am acted as the project & scientific coordinator and lead the research & development of energy management strategies and emerging flexibility markets design.

Convex Optimal Power Flow for Distribution Power Systems & Microgrids 2020

Developed novel multi-objective optimal power flow (optimization) methodologies to compute optimal dispatch of distributed renewable energy resources under various grid operational use cases & scenarios.

Interconnection Studies of Renewable-based Power Plants 2016-2019

Conducted diverse interconnection & grid compliance studies of renewable energy-based generation projects (biomass, micro-hydro, solar photovoltaic) that cover static, dynamic/stability and short circuit analysis.

Selected Publications & Conferences

- Reinforcement Learning for Robust Voltage Control in Distribution Grid Under Uncertainties (*Sustainable Energy, Grids and Networks*, Elsevier, **2023**)
- Mitigation of Grid Parameter Uncertainties in a Model-Based Voltage Controller for Distribution Systems (*Electric Power Systems Research*, Elsevier, **2023**)
- A Three-Stage Strategy with Settlement for an Energy Community Management Under Grid Constraints (*IEEE Transactions on Smart Grid*, **2022**)
- Flexibility Valorization in Energy Communities : Grid Constraints Impact and Mitigation (*ISGT Europe* – **Grenoble, France. 2023**)
- Uncertainties Impact and Mitigation with an Adaptive Model-Based Voltage Controller (*Electrimacs* – **Nancy, France. 2022**)
- Parameter Tuning for LV Centralized and Distributed Voltage Control with High PV Production (*IEEE Madrid PowerTech* – **Madrid, Spain. 2021**)

Technical Skills

Programming Languages & Frameworks	Python • SQL • Git • GitHub • LaTeX
Mathematical Programming & Modeling	Pyomo • CVXPY • Matlab/Simulink • Gurobi • CPLEX
Data Science	Numpy • Pandas • Matplotlib • Scipy • Scikit-learn • Jupyter Notebook
Power System & Energy Softwares	Digsilent Power Factory • Homer Energy • PSS/E • ETAP • PSCAD • OpenDSS • PyPower
Others	Microsoft Office • Visio • Wordpress

Language Skills

- Indonesian — Native
- English — Fluent
- French — Intermediate (B1-Level)

Miscellaneous/Interests

- **Author** @ konsepteknik.com
- Tennis, golf, running, football, fitness
- Musical instruments (guitar & piano)