

## **Prof. Veysel Murat İstemihan Genç**

### **Personal Information**

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### **International Researcher IDs**

ScholarID: vMx1ZuwAAAAJ

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Publons / Web Of Science ResearcherID: A-6134-2019

ScopusID: 57199218188

Yoksis Researcher ID: 46250

### **Education Information**

Doctorate, Washington University in St. Louis, The Sever Institute of Technology, Electrical and Systems Engineering / Systems Science and Mathematics, United States Of America 1997 - 2001

Postgraduate, Washington University in St. Louis, The Sever Institute of Technology, Electrical and Systems Engineering / Systems Science and Mathematics, United States Of America 1997 - 1998

Postgraduate, Bogazici University, Institute Of Science, Department Of System And Control Engineering (Interdisciplinary), Turkey 1994 - 1997

Undergraduate, Istanbul Technical University, Elektrik-Elektronik, Elektrik Mühendisliği, Turkey 1989 - 1994

### **Foreign Languages**

English

### **Research Areas**

Electrical and Electronics Engineering, Energy, Power System Analysis, Electric Power Transmission, Distribution and Protection, Engineering and Technology

### **Academic Titles / Tasks**

Professor, Istanbul Technical University, Elektrik-Elektronik, Elektrik Mühendisliği, 2019 - Continues

Associate Professor, Istanbul Technical University, Elektrik-Elektronik, Elektrik Mühendisliği, 2014 - 2019

Assistant Professor, Istanbul Technical University, Elektrik-Elektronik, Elektrik Mühendisliği, 2004 - 2014

Research Assistant, Istanbul Technical University, Elektrik-Elektronik, Elektrik Mühendisliği, 1996 - 2004

### **Published journal articles indexed by SCI, SSCI, and AHCI**

- Benchmark of machine learning algorithms on transient stability prediction in renewable rich power grids under cyber-attacks**

AYGÜL K., Mohammadpourfard M., Kesici M., Kucuktezcan F., Genç V. M. İ.

Internet of Things (Netherlands), vol.25, 2024 (SCI-Expanded)

- II. **A novel integrated framework for real-time prediction of transient instabilities in power systems with their severity levels using deep learning**  
Kesici M., Mahdi M., Yaslan Y., Şeker Ş. S., Genç V. M. İ.  
Sustainable Energy, Grids and Networks, vol.36, 2023 (SCI-Expanded)
- III. **Preserving microgrid sustainability through robust islanding detection scheme ensuring cyber-situational awareness**  
Tajdinian M., Mohammadpourfard M., Weng Y., Genç V. M. İ.  
Sustainable Cities and Society, vol.96, 2023 (SCI-Expanded)
- IV. **Deep learning-based framework for real-time transient stability prediction under stealthy data integrity attacks**  
Kesici M., Mohammadpourfard M., AYGÜL K., Genç V. M. İ.  
Electric Power Systems Research, vol.221, 2023 (SCI-Expanded)
- V. **Predictive models development using gradient boosting based methods for solar power plants**  
Aksoy N., Genç V. M. İ.  
Journal of Computational Science, vol.67, 2023 (SCI-Expanded)
- VI. **Reinforcement learning-based demand-side management by smart charging of electric vehicles**  
Ozcelik M. B., Kesici M., Aksoy N., Genç V. M. İ.  
ELECTRICAL ENGINEERING, vol.104, no.6, pp.3933-3942, 2022 (SCI-Expanded)
- VII. **Electric load forecasting under False Data Injection Attacks using deep learning**  
Moradzadeh A., Mohammadpourfard M., Konstantinou C., Genç V. M. İ., Kim T., Mohammadi-Ivatloo B.  
Energy Reports, vol.8, pp.9933-9945, 2022 (SCI-Expanded)
- VIII. **Deep learning-based cyber resilient dynamic line rating forecasting\***  
Moradzadeh A., Mohammadpourfard M., Genç V. M. İ., Şeker Ş. S., Mohammadi-Ivatloo B.  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, vol.142, 2022 (SCI-Expanded)
- IX. **A decentralized emergency control scheme for power System transient stability enhancement based on model predictive control**  
Msaddi S., Motalebzadeh M., Montakhabi K., Yalçın Y., Genç V. M. İ.  
Electric Power Systems Research, vol.209, 2022 (SCI-Expanded)
- X. **Cyber-Physical Attack Conduction and Detection in Decentralized Power Systems**  
Mohammadpourfard M., Weng Y., Khalili A., Genç V. M. İ., Shefaei A., Mohammadi-Ivatloo B.  
IEEE Access, vol.10, pp.29277-29286, 2022 (SCI-Expanded)
- XI. **A novel optimization method for wind power investment considering economic and security concerns**  
Ayvaz A., Genç V. M. İ.  
JOURNAL OF RENEWABLE AND SUSTAINABLE ENERGY, vol.14, no.1, 2022 (SCI-Expanded)
- XII. **Real-time transient stability prediction and coherency identification in power systems using Koopman mode analysis**  
Jafarzadeh S., Genç V. M. İ., Nehorai A.  
ELECTRIC POWER SYSTEMS RESEARCH, vol.201, 2021 (SCI-Expanded)
- XIII. **Cyber-Resilient Smart Cities: Detection of Malicious Attacks in Smart Grids**  
Mohammadpourfard M., Khalili A., Genç V. M. İ., Konstantinou C.  
SUSTAINABLE CITIES AND SOCIETY, vol.75, 2021 (SCI-Expanded)
- XIV. **An ensemble model for wide-area measurement-based transient stability assessment in power systems**  
Saner C. B., Yaslan Y., Genç V. M. İ.  
ELECTRICAL ENGINEERING, vol.103, no.6, pp.2855-2869, 2021 (SCI-Expanded)
- XV. **Contingency-based adaptive synthetic data generation to improve transient stability prediction in power systems**  
Jafarzadeh S., Yaslan Y., Genç V. M. İ.

- INTERNATIONAL TRANSACTIONS ON ELECTRICAL ENERGY SYSTEMS, vol.31, no.11, 2021 (SCI-Expanded)
- XVI. **Real-time transient stability prediction of power systems based on the energy of signals obtained from PMUs**  
Jafarzadeh S., Genç V. M. İ.  
ELECTRIC POWER SYSTEMS RESEARCH, vol.192, 2021 (SCI-Expanded)
- XVII. **A new method of decision tree based transient stability assessment using hybrid simulation for real-time PMU measurements**  
Behdadnia T., Yaslan Y., Genç V. M. İ.  
IET GENERATION TRANSMISSION & DISTRIBUTION, vol.15, pp.678-693, 2021 (SCI-Expanded)
- XVIII. **An Online Dynamic Security Assessment in Power Systems Using RBF-R Neural Networks**  
Jafarzadeh S., Genç V. M. İ., Cataltepe Z.  
IETE JOURNAL OF RESEARCH, vol.67, no.1, pp.36-48, 2021 (SCI-Expanded)
- XIX. **Information-gap decision theory based transient stability constrained optimal power flow considering the uncertainties of wind energy resources**  
Ayvaz A., Istemihan Genc V. M. İ.  
IET RENEWABLE POWER GENERATION, vol.14, no.11, pp.1946-1955, 2020 (SCI-Expanded)
- XX. **A Real-Time Self-Healing Methodology Using Model- and Measurement-Based Islanding Algorithms**  
Mahdi M., Genç V. M. İ.  
IEEE TRANSACTIONS ON SMART GRID, vol.10, no.2, pp.1195-1204, 2019 (SCI-Expanded)
- XXI. **Preventive and Corrective Control Actions on Power Systems via Heuristic Optimization Methods with Consecutive Search Space Reduction**  
Fatih Kucuktezcan C. F., Murat Istemihan Genc V. M. İ., Kaan Erol O.  
Electric Power Components and Systems, vol.47, no.1-2, pp.90-100, 2019 (SCI-Expanded)
- XXII. **Post-fault prediction of transient instabilities using stacked sparse autoencoder**  
Mahdi M., Genç V. M. İ.  
Electric Power Systems Research, vol.164, pp.243-252, 2018 (SCI-Expanded)
- XXIII. **Probabilistic dynamic security assessment of large power systems using machine learning algorithms**  
Jafarzadeh S., Genç V. M. İ.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.26, no.3, pp.1479-1490, 2018 (SCI-Expanded)
- XXIV. **Multilabel learning for the online transient stability assessment of electric power systems**  
Beyranvand P., Genç V. M. İ., Çataltepe Z.  
Turkish Journal of Electrical Engineering and Computer Sciences, vol.26, no.5, pp.2661-2675, 2018 (SCI-Expanded)
- XXV. **Dynamic security enhancement of power systems using mean-variance mapping optimization**  
KUCUKTEZCAN C. F., Genç V. M. İ.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.4, pp.3188-3200, 2017 (SCI-Expanded)
- XXVI. **Preventive and corrective control applications in power systems via Big Bang-Big Crunch optimization**  
Kucuktezcan C. F., Genç V. M. İ.  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, vol.67, pp.114-124, 2015 (SCI-Expanded)
- XXVII. **A new dynamic security enhancement method via genetic algorithms integrated with neural network based tools**  
Kucuktezcan C. F., Genç V. M. İ.  
ELECTRIC POWER SYSTEMS RESEARCH, vol.83, no.1, pp.1-8, 2012 (SCI-Expanded)
- XXVIII. **Decision Tree-Based Preventive and Corrective Control Applications for Dynamic Security Enhancement in Power Systems**  
Genc İ., Diao R., Vittal V., Kolluri S., Mandal S.  
IEEE TRANSACTIONS ON POWER SYSTEMS, vol.25, pp.1611-1619, 2010 (SCI-Expanded)

- XXIX. **A Robust Fault Detection and Isolation Method in Load Frequency Control Loops**  
Caliskan F., Genc I.  
IEEE TRANSACTIONS ON POWER SYSTEMS, vol.23, pp.1756-1767, 2008 (SCI-Expanded)
- XXX. **Impact of Distributed Generators on the Oscillatory Stability of Interconnected Power Systems**  
Genç V. M. İ., Usta Ö.  
Turkish Journal Of Electrical Engineering And Computer Sciences, vol.3, no.1, pp.149-160, 2005 (SCI-Expanded)
- XXXI. **Clustering the bulk power system with applications towards Hopf bifurcation related oscillatory instability**  
Genc I., Schattler H., Zaborszky J.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.33, pp.181-198, 2005 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Design of Graphical User Interface for Artificial Intelligence-Based Energy Management System for Microgrids**  
AKSOY N., GENÇ V. M. İ.  
Electrica, vol.23, no.2, pp.202-211, 2023 (Peer-Reviewed Journal)
- II. **Energy Storage Management for Microgrids Using n-Step Bootstrapping**  
AKSOY N., Genç V. M. İ.  
IEEE Canadian Journal of Electrical and Computer Engineering, vol.46, no.2, pp.107-116, 2023 (Scopus)
- III. **Güç Sistemlerinde Geçici Hal Kararsızlığının Arıza Öncesi Fazör Ölçümleri Kullanarak Karar Ağacı Tabanlı Kestirimi**  
SANER C. B., KESİCİ M., Mahdi M., YASLAN Y., GENÇ V. M. İ.  
Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.23, no.1, pp.6-14, 2019 (Peer-Reviewed Journal)
- IV. **Unknown Input Observer Based Robust Actuator Fault Detection and Isolation in Interconnected Power Systems**  
GENÇ V. M. İ., ÇALIŞKAN F.  
Balkan Journal of Electrical and Computer Engineering, vol.7, pp.6-14, 2019 (Peer-Reviewed Journal)
- V. **A Novel Feature Selection Method for the Dynamic Security Assessment of Power Systems Based on Multi-Layer Perceptrons**  
Beyranvand P., KÜÇÜKTEZCAN C. F., ÇATALTEPE Z., GENÇ V. M. İ.  
International Journal of Intelligent Systems and Applications in Engineering, vol.1, no.6, pp.53-58, 2018 (Peer-Reviewed Journal)

## Supported Projects

Genç V. M. İ., Project Supported by Higher Education Institutions, Akıllı Şebekelerde Sistem Kararlılığının Artırılmasında İzleme Kontrol ve Optimizasyon Yöntemleri, 2018 - 2019

Genç V. M. İ., Al Waeli A. M. J. K., Project Supported by Higher Education Institutions, Mikro Şebekelerde Ada Durumuna Geçme Koşulunun Karar Ağaçları Kullanarak Tespit Edilmesi, 2017 - 2018

Genç V. M. İ., Project Supported by Higher Education Institutions, Geçici Hal Kararlılığı için Güç Sistemlerine Uygulanan Düzeltici Kontrol Yöntemleri, 2016 - 2018

Genç V. M. İ., Project Supported by Higher Education Institutions, YAVAŞ EŞEVRELİLİĞE DAYALI KORUYUCU ADALARA AYIRMA İÇİN GÜVENLİK DEĞERLENDİRMESİ, 2015 - 2018

Genç V. M. İ., Project Supported by Higher Education Institutions, Küçük İşaret Kararlılığı için Sınıflandırma (Karar) Ağacı Tabanlı Üretiminin Optimal Yeniden Planlanması, 2012 - 2018

Genç V. M. İ., Project Supported by Higher Education Institutions, KARAR AĞAÇLARI KULLANILARAK GÜÇ SİSTEMLERİNDE GEÇİCİ HAL KARARLILIĞINA İLİŞKİN GÜVENLİK BÖLGELERİNİN HESAPLANMASI VE ÜRETİMİNİN YENİDEN PLANLANMASI, 2010 - 2018

Genç V. M. İ., Project Supported by Higher Education Institutions, Bilinmeyen Girişli Gözlemleyiciler Yardımıyla Yük Frekans Kontrolünde Dayanıklı Algılayıcı Arıza Tespiti ve Ayırt Edilmesi, 2007 - 2018

Genç V. M. İ., Project Supported by Higher Education Institutions, Salınlı Kararsızlıklara Karşı Güç Üretimi Dağılımı için Fizibilite Sınırlarının Hesaplanması, 2004 - 2018

Genç V. M. İ., Project Supported by Higher Education Institutions, Rüzgar Türbini Generatörlerinin Güç Sistemi Dinamik ve Statik Güvenliği Üzerine Etkilerinin İncelenmesi ve Makina Öğrenmesi Yöntemleri Yardımıyla Değerlendirilmesi, 2014 - 2017

Genç V. M. İ., Project Supported by Higher Education Institutions, Yenilenebilir Enerji Kaynaklarına Sahip bir Mikro Şebekenin Dinamik Performansının İyileştirilmesi, 2015 - 2016

Genç V. M. İ., Project Supported by Higher Education Institutions, Güç Sistemlerinde Gerilim Kararlılığının Karar Ağaçları Yardımıyla Değerlendirilmesi, 2012 - 2015

Genç V. M. İ., Project Supported by Higher Education Institutions, Güç Sistemlerinde Veri Madenciliği Uygulamalarıyla Dinamik Güvenliğin Değerlendirilmesi ve İyileştirilmesi, 2012 - 2015

Genç V. M. İ., Project Supported by Higher Education Institutions, GÜÇ SİSTEMLERİNİN İŞARET KARARLILIĞINA İLİŞKİN GÜVENLİK BÖLGELERİ VE SINIRLARININ KARAR AĞAÇLARI İLE BELİRLENMESİ VE GÜVENLİĞİ GELİŞTİREN KONTROL YÖNTEMLERİ TASARIMI, 2009 - 2011

## Awards

Genç V. M. İ., Scientific Publication Award (2021), Istanbul Technical University, May 2022

Genç V. M. İ., Academic Performance Award (2016-2020), Istanbul Technical University, May 2022

Genç V. M. İ., Project Performance Award, Tübitak, February 2020

## Non Academic Experience

Washington University

Arizona State University

Washington University