Ahmad Sepehri Zia

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Education

Master's degree in Power System Engineering — **2016 – 2019**

- Shahid Chamran University of Ahvaz, Iran
- GPA: 4.00/4.00 (18.07 / 20)

Bachelor's degree in Power System Engineering — **2012 – 2016**

- Shahid Chamran University of Ahvaz, Iran
- GPA: 3.34/4.00 (16.25 / 20) - Last two years: 3.60/4.00

Awards and Honors

- Ranked **1st** in class (GPA: 18.07 / 20) during my Master's program among 22 students.
- Ranked in the top 2% in the University Entrance Exam.
- Ranked in the top 8 applicants in the Khuzestan Steel Company (KSC) employment exam – Current position

Research Interests

- Smart Grids and Renewable Energy
- Power System Control and Optimization
- Energy Storage Systems
- Power System Protection and Security
- Distribution Grids

Publications

- In Prep: **Transverse Differential Protection for Double-Circuit Transmission Lines Using Incremental Complex Power**
  - In this paper, a method for differential protection of double-circuit transmission lines is proposed, which is based on a new alpha plane and does not rely on communication channels or devices between the two ends of the line. It is highly reliable as it only utilizes local measurements to distinguish faults on either line. Additionally, it is resilient to power swings and current transformer saturation.
- **A. Sepehri-Zia**, A. Saffarian, and M. Saniei, "Presenting a Differential Protection Plan for Transmission Lines Based on Incremental Complex Power", 4th National Conf. on Tech. in Elec. and Comp. Eng., Payame Noor University of Tehran, Jan. 2019 (in Persian).

Teaching Experience

Teaching Assistant - Shahid Chamran University of Ahvaz, Iran

- **Power System Analysis – Dr. Alireza Saffarian – 2017**
  - Taught undergraduate electrical engineering students the basic principles of power grids, transmission line models, per-unit calculations, and load flow calculations.
  - Took an exam from aforementioned students which contributed to their final score.

Academic Projects

- **Assessment of Phasor Measurement Units (PMU) implementation in the Khuzestan transmission grid for distance protection improvement**
  - Carried out various fault simulations on the Khuzestan transmission grid in DIgSILENT
  - Provided analytic reports for the results and findings.
  - Helped with algorithm coding and implementation in MATLAB.
- **Book Translation: Power System Relaying, 4th Edition by Stanley H. Horowitz, Arun G. Phadke**
  - Translation of the new chapters 14 and 15 to Persian – Unpublished
    - Ch14: Improved Protection with Wide Area Measurements (WAMS)
    - Ch15: Protection Considerations for Renewable Resources
  - Editing of the translation of the rest of the book.
- **Various other student projects in:**
  - Power Electronics: PV Arrays with MPPT and inverters, Boost/Buck/Ćuk converters (Simulink).
  - Frequency Load Shedding, etc.
  - Experience with Arduino.

Work Experience

Khuzestan Steel Company (KSC) _____ Nov. 2022 – Present (1 yrs, 1 mos)

- Electrical Engineer at the Projects Technical Office
  - Reviewing and analysing technical documentations of projects both in planning stage and during execution.
  - Presenting reports during meetings held with contractors/consultants throughout the projects.
  - Involved in two of the largest projects in the company:
    - The largest MIDREX® Mega Module DRI plant in Iran (2,000,000 ton/yr).
    - The new Electric Arc Furnace (EAF#7) - Preparing documents for an international tender.

Ahvaz Electric Power Distribution Co. (AEPDCO) _____ Sep. 2019 – Oct. 2022 (3 yrs, 2 mos)

- Power System Protection Engineer (Consultant)
  - Configuration and testing of auto-reclosers and other protective devices in the distribution grid: Successfully installed 15 new auto-reclosers after studying critical feeders.

  - Coordinating MV distribution relays with auto-reclosers and fault analysis in a distribution gird with heavy penetration of HVAC/pump loads.
  - Installed the first ever auto-sectionalizer in Ahvaz dist. grid ensuring full coordination with upstream auto-recloser.
  - PCB repairs: Repaired ENTEC recloser PCBs, RTU power supplies, etc. — Significantly reduced company expenditures by fault finding and repairing these devices.
  - Developed an advanced database in MS Access containing all the information regarding the dist. automation system and associated equipments.

- Automation Distribution Engineer (Consultant)
  - Directed the technical assessment of three tenders for: RTUs, Modems and a SCADA software.
    - Before this point, tender assessments primarily revolved around cost considerations. However, under my guidance, evaluations shifted towards meticulous inspections and testing aligned with the latest standards and regulations.
  - Worked on various SCADA systems, RTUs, Modems, etc.
  - DNP3.0, IEC101/104 communication protocols.

Attended Workshops

- Siemens SIPROTEC 5 Relays Workshop, By: **Faraniroo Co.** _____ Nov. 25 $\sim$ 29, 2023
  - Hands-on with the state-of-art IED devices made by **Siemens**. Discussed topics:
    - Protective Relay: **7SA87**
    - Bay Control Unit: **6MD86**
    - Digsi5 Software: Full project and relay set-up
    - Communication Protocols: IEC 61850, GOOSE
    - Connection to the IEDs and full configuration

- Project Management Workshop Package, By: **Dr. Vahid Azadmanesh** _____ Nov. 2023 - Ongoing
  - Project, Program, Portfolio Management, Context and Concept (ISO21500 - 2021) – **2 Days**
  - **P**roject **M**anagement **B**ody **o**f **K**nowledge (PMBOK 6^{th} and 7^{th} Ed.) – **2 Days**
  - **Pr**oject **In C**ontrolled **E**nvironment**2** (PRINCE2 - Foundation Course) – **1 Day**
  - Ongoing...

- AMT105 Tester and AMR Protective Relay Workshop, By: **Vebko Co.** _____ Feb. 2018
  - AMT105 tester – Very similar to Omicron's CMC Universal Relay Test Set
  - Full hands-on with Relay, CT and Breaker tests.
  - AMR Relay – Full set-up, configuration and tests

Computer Skills

- **Programming:**
  - Python
  - Matlab
  - C++
  - JavaScript
  - Visual Basic
- **Software:**
  - Siemens (Digsi)
  - Schneider (Easergy)
  - ENTEC Reclosers
  - Buheung RTU
- **Simulations in:**
  - DIgSILENT
  - ETAP
  - PSCAD
  - MATLAB/ Simulink
  - Proteus
  - LTSpice
- **MS Office:**
  - Access
  - Excel
  - Visio
  - PowerPoint
  - Word
- **Power BI**
- **Autodesk:**
  - AutoCAD
  - 3Ds Max
  - Revit
- **Adobe:**
  - Illustrator
  - Photoshop

Language Skills

- **IELTS Academic – Band Score: 8.0 (Sep. 2022)**
  - Listening: 8.5
  - Reading: 8.5
  - Writing: 6.0
  - Speaking: 8.0
- **Persian (Native)**