OMID
ABED

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OBJECTIVE

A highly motivated engineer, skilled in electromagnetic/photonic device designs and familiar to artificial intelligence; with 2 years' experience in cutting-edge research.

EDUCATION

MSc in Electrical Engineering – Field and Waves | University of Tehran 17.00 / 20 (thesis excluded)
2017 – 2020
Thesis: Realization of Optical Beam Steering for Integrated Lidars (more detail here)
Defended on 15 Sep 2020 with ''Excellent'' grade.

*Advisor***:** Dr. Leila Yousefi

BSc in Electrical Engineering - Telecommunications | Azad University (with honors) 18.08 / 20
2012 – 2016
Final Project: Study of OFDM systems

EXPERIENCE

Research Assistant | Nanophotonics Research Group – University of Tehran
2018 – 2020 (http://www.nanophotonics.ir)
- ✓ Designed a novel tunable beam steering device using phase change materials in the near-IR range.
- ✓ Designed a novel tunable 2-dimensional beam steering device using transparent conducting oxides in near-IR range.
- ✓ Performed a thorough literature review about suitable beam-steering methods for integrated lidars
- ✓ Achieved a solid background in machine learning (especially deep learning) to use it in further researches e.g., inverse deign, optical neural networks.
- ✓ Performed numerous numerical Multiphysics analysis on nanophotonic structures (electromagnetic, AC/DC, and semiconductor analysis).
- ✓ Collaborated with other students in the lab or research meetings.
- ✓ Redesigned and updated group website.

Chief Teaching Assistant | University of Tehran (Engineering Electromagnetics) 2019- 2020
- ✓ Chief teaching assistant in engineering electromagnetics course for undergraduate students.
- ✓ Designed homework problems.

Teaching Assistant | University of Tehran (Circuit laboratory) 2017-2018
- ✓ Teaching assistant in circuit laboratory course for undergraduate students.

Microcontroller programming Intern| Nira System. 2016
- ✓ Learning fundamentals of microcontrollers and helping senior engineers for programming AVR Microcontrollers.

PUBLICATIONS

Accepted Manuscripts

1. Abed, O., Yousefi, L. "Tunable metasurfaces using phase change materials and transparent graphene heaters". Accepted in Optics Express https://doi.org/10.1364/OE.404103 (Abstract in here)
2. Abed, O., Yousefi, L. "Free Space Beam Shaping Using phase-change Reconfigurable metasurfaces". Accepted in 3rd West Asian Symposium on Optical and Millimeter-wave Wireless Communications. (Abstract in here)

Manuscripts in preparation

3. Abed, O., Yousefi, L. "Double-Axis Optical Beam Steering Enabled by Voltage Controlled Tunable Metasurface". (Abstract in here)

SKILLS

- COMSOL MULTIPHYSICS
  - ✓ High frequency simulations
  - ✓ AC/DC simulations
  - ✓ Semiconductors Analysis
  - ✓ Heat Transfer Simulations
- PYTHON
  - ✓ Numpy
  - ✓ Pandas
  - ✓ Sklearn
  - ✓ Tensorflow

- MATLAB
  - ✓ 5 years' experience in scientific programming
- OTHER
  - ✓ Lumerical FDTD
  - ✓ CST studio suite
  - ✓ Microsoft Office
  - ✓ Adobe illustrator

HONORS

- Achieved rank 25 in national university entrance exam (Konkur) for MSc in electrical engineering, among more than 30,000 competitors (in top 0.1%).
- Former member of Iran rowing national team. Winner of a bronze and a silver medal in Asian Junior Championships.

CERTIFICATIONS

Silicon Photonics Design, Fabrication and Data Analysis
- ✓ Conducted by Sharif University of Technology (certificate)

Deep learning Specialization
- ✓ Conducted by Coursera (certificate)

Machine Learning
- ✓ Authorized by Stanford University – Conducted by Coursera (certificate)

LANGUAGES

English: Fluent (TOEFL test will be taken on 28 October)
Persian: Native