Arian Maghsoudnia

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Personal Profile

I am a second year Energy engineering student Politecnico di Milano, seeking an entry-level position in the sustainable energy technology traineeship program. Due to the high academic demands of exams, assignments, and intensive research during my degree, I have acquired a perfect hard-working spirit and thus, I am also able to work under pressure, meticulously. Over the past years, I have also had a position of researcher in Thermodynamic and Energy-Conversion Lab, proving that I can potentially surpass so many students within a professional field of working with software like Fluent, C++, SolidWorks and Matlab. More importantly, I have become adept in modelling and analytical solving as well as experimental testing and programming in the field of optimization. I have also had good performance in the course of advanced math I took in Polimi, mainly regarding the numerical optimization and modelling. I am looking for a challenging position where I can assess my ideas which can further be used for practical purposes so I can play my role in obviating the global concern over energy demands and its sustainability and cleanliness.

Education

September 2018 – Present
M.Sc. in Energy Engineering
Politecnico di Milano

September 2013 – March 2018
B.Sc. in Mechanical Engineering
Amirkabir University of Technology (Tehran Polytechnic)
Grade achieved:

- Bachelor Degree Cumulative GPA
  16.51/20
- GRE Quantitative Reasoning
  165/170

Selected Scores

- Renewable Energies 18.1/20
- C Programming 16.5/20
- Electrical Energy Conversion in RES 29/30
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- CFD 18.1/20
- Advanced Math 25/30

Language Proficiency

English

- **TOEFL IBT : 110 (R:30 L:27 S:27 W:26)**
- **GRE: 148 in Verbal Reasoning**

Italian

- A2 Certificate, European Framework of Reference

German

- Compeleted A1 course in Iran Language Institute

Persian

- Native Language

Research Interest

- Numerical Optimization and Modelling
- Objective Programming
- Solar Systems
- Green Buildings
- Green Transportation
- Computational Fluid Dynamics

Work Experience

January 2018 – July 2018
Position

- Researcher

Supervisor

- Dr. Reza Nadafi

Location

- Entrepreneurship and Innovation Center, Amirkabir University of Technology

Main duties performed:

1- Thermal calculations in an HRSG powerplant's stack using FLUENT solver and analytical solution verification. Due to the need for designing a thermoelectric dew point detector in the stack of power plants, thermal calculations should be carefully done to find out the efficacy of the designed sensor. The ability to use Thermal Conductive Detectors are also investigated in this project.

December 2017 – August 2018
Position

- English Teacher

Supervisor

- Farshid Lavasani

Location

- Iranmehr Language Institute

August 2017 – January 2018
Position
- Researcher

Supervisor
- Dr. Saman Paria

Location
- Energy Conversion and Thermodynamics labs, Mechanical Engineering Department, Tehran Polytechnic

Main duties performed:

2- Conceptual design of energy-efficient house using regenerative cycle adjusted for Iran's weather, experimental testing and validation is the next objective.
3- Optimizing single-crystal PV panels using selective filters. The automated system of logging for calculating the maximum power point has been designed which can further be promoted to a tracking system. Also, the effect of using commercial low emission films has been experimentally tested. Further increasing the efficiency and cooperation with chemical engineering department to make filters ourselves is the next objective.

January 2015 – January 2016
Position
- Leader of the Industrial Connection Committee
- Leader of the Informatics Committee

Location
- Scientific Association of Mechanical Engineering Department, Tehran Polytechnic

Main duties performed:
I was in charge of a group which had the goal to establish connections between the university and industrial investigators. In this regard, we would collect ideas from students and tried to find proper industries in which they could commercialize their design. Moreover, multiple visits from renown industrial regions had been coordinated for students so they could acquire greater insight.
As the Informatics committee leader, I managed a project to gather a comprehensive, categorized database of books and software which can be used productively for years.

Jan 2015 – May 2015
Position
- Conductor of Solid Mechanics Seminars, ISME 2015

Location
- Mechanical Engineering Department, Tehran Polytechnic
- Main duties performed:

Iran society of mechanical engineering holds its annual seminar in one major university where Tehran Polytechnic was responsible for 2015 sessions. My team worked on conducting and coordinating solid mechanic presentations from authors whose article were admitted to the conference.

Jun 2015 – October 2015

Position

- Intern

Location

- Saipa Automotive Manufacturing Group

Main duties performed:
As an intern, I visited multiple assembly and manufacturing sites, mostly when the group wanted to test a new product to be installed on their products. Besides, I was asked to organize one of the automatic purchasing systems so they could save money by excluding unnecessary items from an automatic system.

Teaching Experience

January 2015 – June 2016
Position

- Teaching Assistant

Location

- Mechanical Engineering Department, Tehran Polytechnic

Main duties performed:
For the CFD course, coding in C++ was required for which I compiled materials and taught for the course; the experience was significantly important as I taught students to both use basic C programming syntaxes as well as writing and using main solving codes – TDMA, Gauss-Seidl and Crank-Nicolson to name a few.

Honors and Awards

Honor

- **Ranked First among Scientific Associations, AUT**
- **Ranked First for "Ofoq" Scientific Magazine, AUT**

Issuer

- Scientific Student Associations of Amirkabir University of Technology

Description

Due to the standardized grading system of the Scientific Student Associations of Amirkabir University of Technology (SAO), one scientific association, and one publication is chosen as the best one in the overall ranking. The scientific association of mechanical engineering department was selected by this organization for the overall performance of the year 2016. "Ofoq", the scientific quarterly magazine of scientific associations of mechanical engineering department was also chosen as the first rank.

Honor

- **Ranked Third for "Ofoq" Scientific Magazine**

Issuer

- Ministry of Science, Research, and Technology of Iran

Description

"Harekatfest" (in Persian Jashnvare-ye-Melli-e-Harekat) is annually held by the Ministry of Science, Research and Technology of Iran to determine the most successful scientific associations. “Ofoq” magazine was selected as the third best scientific magazine of the year by this organization in the year 2016.

Honor

- Ranked Top 1% in the National Entrance Examination form Iranian universities

Issuer

- Educational Testing Organization of Iran

Description

Ranked 727 among approximately 250,000 participants in the National Entrance Examination form Iranian universities, Iran. 2013

Honor

- **Ranked First among all project, 27th NODET Exhibition**

Issuer

- National Organization of Developing Exceptional Talents

Description

A pilot of the paper-recycling factory was designed and built by our team member which enabled us to recycle a considerable amount of school’s wasted paper every year. The project was selected as the best project and was sent to the national contest of innovative ideas.

Projects

Optimizing Single Crystal PV Panels Using Low Emission Films

Apr 2017 – Present

Description

Thesis Project

Conceptual Design of Full Load Power Plant Energy Storage System

May 2017

Description

In this project, a combined system of flywheels and hydraulic water-driven storage unit was designed to save energy, so power plant can work on its full load even when demands are low. Additionally, economic and technical feasibility studies were performed for the design.

Design of Leveller Orifice to Provide Equal Mass Flow Rate in Boiler Risers

May 2017

Description

In this project, a code was written to find the arrangement of orifices as well as their inner and outer diameter which can provide equal mass flow-rate in all riser tubes, including all of the losses from downcomers, risers, and drums.

Designing 6-Speed Gearbox

Dec 2016 – Jan 2017

Description

Conceptual design of a multi-speed gear-box, including basic design of gears, strength and fatigue analysis of the gears and choosing belts and bearings were included. Calculations led to optimal gear modules and shaft material selection as well as finding best force-exertion method.

Multiple-pane Windows Heat Transfer Analysis
Apr 2016 – May 2016
Description
Many factors including air circulation around the window, the amount to which the gap between the windows have been vacuumed and the shape of gaps and the distance between the panes can play important roles in the total heat transfer of multiple pane windows. This project uses a commercial CFD code to determine the most efficient tilting angle of the windows and also the optimum distance between the panes.

Delta 3D Printer Strength Analysis
Jan 2016 – Jan 2016
Description
A 3D delta printer has been re-designed and the fatigue analysis of the joints and nozzles done using ANSYS fatigue tools. Since the static load in this kind of printers is not the determinant factor in the failure of printers, fatigue failures are the dominant cause of this phenomena. These calculations can be used for further reinforcement of weak points.

Licenses and Certificates

- Outstanding Performance in American English TTC Course, by Iranmehr Institute
- License of ANSYS Structural training course by Scientific Association of Mechanical Engineering Department, Tehran Polytechnic
- License of ANSYS Fluent training course by Scientific Association of Mechanical Engineering Department, Tehran Polytechnic
- Certificate of participation & completion of Green buildings seminar, focusing on LEED standard system explanation, University of Tehran Polytechnic
- Certificate of participation & completion of Body in White workshop, focusing on parametric design, University of Tehran Polytechnic

Hobbies and Interests

- Mountain climbing
- Rock Climbing
- Trekking
- Literature & Art