R E S U M E

Abolfazl Mohammadijoo

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Date of Birth: 16 Sept 1984   ;   **Marital Status:** Single

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Education

- ✓ **Worcester Polytechnic Institute,** Worcester, MA, USA   **(unfinished)**
  PhD Candidate in Mechanical Engineering   ,   (Jan. 2011 – Aug. 2011)

- ✓ **Iran University of Science and Technology,** Tehran, IRAN (3rd Best University of IRAN)
  M.S.c in Mechanical Engineering (Focused on Control & Robotic) , (Sept. 2007 – Aug. 2010)

- ✓ **Sharif University of Technology,** Tehran, Iran (**Best** Technological University in IRAN)
  B.S.c in Mechanical Engineering & Marine Engineering   ,   (Sept. 2002 – Sept. 2007)

Artificial Intelligence Knowledge

- Machine Learning   (Machine Learning level: Full Stack Engineer ➔ 5 0ut of 5)

- Deep Learning   (Deep Learning level: Full Stack Engineer ➔ 5 0ut of 5)

- Reinforcement Learning   (Reinforcement Learning level: Full Stack Engineer ➔ 5 0ut of 5)

- Neural Networks (including recurrent networks and convolutional networks)
  (Neural Networks level: Full Stack Engineer ➔ 5 0ut of 5)

- Computer Vision (Computer Vision level: Full Stack Engineer ➔ 5 0ut of 5)

- Natural Language Processing (NLP level: Advanced ➔ 4 0ut of 5)

- Fuzzy Systems and Fuzzy Control (Fuzzy Control level: Full Stack Engineer ➔ 5 0ut of 5)

Programming & Software Development Knowledge

- **C# Package:** OOP, Windows Form, WPF, WCF, N-Tier Programming, ADO.Net, Entity Framework   (C# level: Expert ➔ 4 0ut of 5)

- **C++ Package:** OOP, GUI with C++ Qt, Image Processing with OpenCV, Deep Learning with Caffe (C, C++ level: Expert ➔ 4 0ut of 5)

- **Python Package:** OOP, GUI (TKinter, PyQt, GTK, WxPython), Working with database (MySQL, Access, Sqlite3), Scientific Computing and Data Science (NumPy, SciPy, Matplotlib, Pandas) (Python level: Full Stack Developer ➔ 5 0ut of 5)

- **Java Package:** OOP, GUI with JavaFX, Database with Hibernate and Oracle Databases

(**Java level:** Expert ➔ 4 0ut of 5)

- **Machine Learning Frameworks:** Scikit Learn, Theano, AWS Machine Learning
  (**Machine Learning level:** Full Stack Engineer ➔ 5 0ut of 5)

- **Deep Learning Frameworks:** TensorFlow, Keras, PyTorch, Caffe 2
  (**Deep Learning level:** Full Stack Engineer ➔ 5 0ut of 5)

- **Image Processing and Computer Vision Frameworks:** OpenCV (python, C++, Java) and Deep Learning Frameworks   (**Computer Vision level:** Full Stack Engineer ➔ 5 0ut of 5)

- **Natural Language Processing:** NLP framework of Python   (**NLP level:** Expert ➔ 4 0ut of 5)

- **Other Programming Languages:** Ruby (OOP) / Objective-C / GoLang / Scala (OOP) / Perl / Assembly   (**Other Programming Languages level:** Advanced ➔ 3 0ut of 5)

- **Databases Package:** RDMS (MySQL, SQL Server, SQLite) / NoSQL (Json, XML, Xpath, Apache Cassandra, MongoDB)   (**Database level:** Expert ➔ 4 0ut of 5)

- **Cloud Computing Services:** Microsoft Azure, Amazon Web Services (AWS)
  (**Cloud Computing Services level:** Expert ➔ 4 0ut of 5)

- **Virtual Machines:** VMware, VirtualBox   (**Virtual Machines level:** Expert ➔ 3 0ut of 5)

- **DevOps:** Maven, Docker, Jenkins, Git   (**DevOps level:** Advanced ➔ 3 0ut of 5)

- **Big Data:** Apache Hadoop, Apache Hive, Apache Pig, Impala, HBase, Apache Kafka
  (**Big Data level:** Advanced ➔ 3 0ut of 5)

General Software Knowledge

- **Engineering:** Solidworks, SolidCAM, COMSOL, Matlab, Simulink, Mathematica, LaTeX, Proteus, CodeVision AVR
- **Industrial Automation:** FluidSim, LabView, SIMATIC STEP 7

Professional & Industrial Working Experiences

Freelance Programmer, Software/Web Developer
(Tutoring + project-based contracts in freelancing websites)
Tehran, IRAN (July 2013 – Now)
My Projects:
1- Software Developer & AI / ML Engineer   (From Aug 2014 - Recent)
Key Responsibilities:
- Teaching "Machine Learning", "Deep Learning", "Computer Vision", "NLP" and "Neural Net" for institutions and organizations and grad students (+ some intermediate level projects)

- Teaching Python (introductory, OOP, PyQt, Tkinter, WxPython, PyGTK and etc) for individuals, institutions and organizations (+ some intermediate level projects)
- Teaching ".Net framework" for institutions and organizations and tutoring Programming Languages like C, C++, C#, Java and JavaScript (+ some intermediate level projects)
- Designing a control software for laboratory AUV via C#
- Designing an Managing software for an Educational Institution in Tehran via C++ Qt

2- Frontend-Backend Developer   (From Feb 2015 - Recent)

Key Responsibilities:

- Teaching "Web Development Package" including HTML, CSS, Bootstrap, JavaScript, JQuery, Ajax, MySql, PHP, Laravel, WordPress, Node.Js, and MongoDB for institutions and organizations and Individuals
- Web Design, SEO Services and E-Commerce Solutions for Companies and individuals based on freelancing contracts
- My Website Development Examples:
  http://programmer-club.ir (WordPress: bbPress)
  http://blog.mohammadijoo.ir (Vanilla WordPress)
  http://mohammadijoo.com (Vanilla PhP)

3- Research engineer of "Control of a mobile manipulator via Neural Network and Machine Vision Project" (6 Months)

Key Responsibilities:

- CAD Design of mobile manipulator via SolidWorks
- Control Design with Matlab & Simulink (Neural Network toolbox)
- Software Development for communication and image processing with on-board cameras with C# and Python

Freelance Researcher   **(Buffalo, NY & Los Angeles, CA) USA   (Sept 2011 – May 2013)**

Research Topics:

- Completing my CAD Design learning Package, including: SolidWorks, SolidCAM, CATIA
- Completing my Artificial Intelligence and Control System Design learning Package
- Learning Robotic new topics like parallel robots, cooperative robots
- Learning Mechatronic Basic Courses: AVR Microcontrollers

Research Assistant, PhD Candidate at Worcester Polytechnic Institute (WPI)
 Worcester, MA, USA   (Jan 2011 – Aug 2011)

Research Topics:

- ✓ Dynamic Modelling and Control of a new Renewable Energy System (Kite Power System)

Research Assistant, Project Manager at Marine Research Center of Sharif University of Technology
Tehran, Iran   (2007-2010)

Key Responsibilities:

- o CAD Design and Manufacturing of an Autonomous Underwater Vehicle (AUV)
- o Software development for sensors data acquisition and remotely control of underwater robot using Matlab GUI & C#
- o Nonlinear Controller design for AUV & Hydrodynamic modelling and CFD simulation of AUV
- o Project Manager of 1st National Unmanned Remote Control Boats Competition

PUBLICATION

1. Conference Paper: "Trajectory Tracking of a 2-Link Mobile Manipulator Using Sliding Mode Control Method", AIRC 2019, International Conference Proceedings by ACM (ISBN: 978-1-4503-7671-6), Cairo, Egypt, December 14-16, 2019
2. "Design and Hydrodynamic Modeling of Testbed SUT-1 Autonomous Underwater Vehicle", 10th IRAN National Marine Industries Conference, Abadan & Khoramshahr, IRAN, 28-30 Oct 2008 **(in Farsi Language)**
3. "Sliding Mode Control Implementation of SUT-1 Autonomous Underwater Vehicle", 11th IRAN National Marine Industries Conference, Kish Island, IRAN, 16-18 Nov 2009 **(in Farsi Language)**

LANGUAGE PROFICIENCY:

1- **Persian (Farsi):** Native

2- **English:** Like Bilingual

3- **French & German & Arabic:** Basic

CERTIFICATIONS:

No	Certification Title	Certificatory Institution	Date
1	PROJECT MANAGEMENT (based on PMBOK 2004)	Sharif University of Technology Alumni Association	Dec 2008
2	MODERN INDUSTRIAL PNEUMATICS	FESTO	Aug 2016
3	ADVANCED PNEUMATICS	FESTO	Sept 2016
4	MODERN INDUSTRIAL HYDRAULICS	FESTO	Sept 2016
5	MASTERING MOBILE HYDRAULICS	FESTO	Sept 2016
6	PROPORTIONAL HYDRAULICS	FESTO	Oct 2016
7	MAINTENANCE AND TROUBLES SHOOTING OF HYDRAULICS SYSTEM	FESTO	Oct 2016
8	PRINCIPLES OF INDUSTRIAL MEASUREMENT AND INSTRUMENTATION	FESTO	Oct 2016
9	BASIC PRINCIPLES OF SENSOR TECHNOLOGY FOR PROFESSIONAL TRAINING	FESTO	Oct 2016
10	BASIC PROGRAMMING OF PLCs	FESTO	Sept 2016

Appendix to Resume

My Engineering & Science Knowledge:

Moreover than my **Bachelor** and **Master Degrees** in **Mechanical Engineering** and **Robotics Engineering**, I have knowledge in some other fields. I briefly mentioned the courses I learned through self-learning and online universities, in below. For more details, please take a look at:　　www.mohammadijoo.com/Courses

Computer Engineering:

1- Automata
2- Data Structures
3- Discrete Mathematics and Discrete Structures
4- Algorithm Design
5- Introduction to Databases
6- Hardware Software Interface (Computer Organization)
7- Computer Networks 1
8- Advanced Programming Languages
9- MicroProcessors & MicroControllers

Artificial Intelligence:

1- Fuzzy Systems and Fuzzy Control
2- Neural Networks
3- Machine Learning
4- Deep Learning
5- Computer Vision
6- Convolutional Neural Networks
7- Game Theory

Electrical Engineering:

1- Basic Circuit Theory 1
2- Basic Circuit Theory 2
3- Logical Circuits
4- Engineering Statics and Probability
5- Signal and System Analysis
6- Electromagnetism
7- Linear Control Systems
8- Electronic 1
9- Electronic 2
10- Electrical Machine 1
11- Electrical Machine 2
12- Communication System 1

13- MicroProcessors & MicroControllers

Physics:
1- General Physics 3
2- General Physics 4 (Modern Physics)
3- Mathematical Physics 1
4- Thermodynamics and Statistical Physics 1
5- Thermodynamics and Statistical Physics 2
6- Analytical Mechanics 1
7- Analytical Mechanics 2
8- Electromagnetism 1
9- Electromagnetism 2
10- Quantum Mechanics 1
11- Quantum Mechanics 2

Chemistry:
1- General Chemistry 1
2- General Chemistry 2

Mathematics:
1- Introduction to Mathematical Analysis
2- Probability 1