AMIRHOSSEIN BAYANI

Junior Software Developer

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Aug 26, 1988

Iranian

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https://github.com/teman67/

Objective

Enthusiastic Junior Software Developer with a Diploma in Full Stack Software Development from the Code Institute, Dublin. Leveraging a decade of experience in Physics and material modeling and simulation, I bring a unique blend of technical expertise and analytical skills to software development and semantic web. Proficient in HTML, CSS, JavaScript, Python, Django, and Predictive Analytics, I am eager to contribute to innovative development teams and expand my knowledge in the dynamic tech industry.

Education

Aug 2023 – Mar 2024
Diploma in Full Stack Software Development (Predictive Analytics)
Code Institute
| Credited by University of West of Scotland

Sep 2013 – Sep 2017
PhD in Nanotechnology Engineering
Kashan University | Kashan, Iran

Sep 2010 – Jan 2013
Master of Solid-State Physics
Kashan University | Kashan, Iran

Sep 2006 – Aug 2010
Bachelor of Physics
Kashan University | Kashan, Iran

Portfolio Projects:

· Online Quiz - Online quiz where users can test their knowledge in the field of Nanotechnology. Technologies Used - HTML5, CSS and JavaScript. GitHub - https://github.com/teman67/Nanotechnology-Quiz-Project

· Adventure text-based Game A text-based game where users can play the game by typing texts into the terminal. Technologies Used - HTML5, CSS, Python, and Heroku. GitHub - https://github.com/teman67/Text-based-Adventure-Game-Project

· Online Resume My online resume where employers can see my background and skills. Technologies Used - HTML5, CSS, Bootstrap, JavaScript, and Python. GitHub - https://teman67.github.io/Bootstrap-Resume/index.html

· Booking online Courses- An online course website where users can book different courses and edit/delete their own courses. Technologies Used: HTML, CSS, Bootstrap, JavaScript, Python, Django, Database, Github, and Heroku. GitHub - https://github.com/teman67/E-Learning-Booking-Courses-Project

· Plant-Disease-Classification- An online app to predict plant disease using Machine Learning and data science. Technologies Used: Python, NumPy, Pandas, Seaborn, TensorFlow, Scikit Learn, Convolutional neural network (CNN), Github, Streamlit, and Heroku. GitHub - https://github.com/teman67/Plant-Disease-Classification-Project

. Metadata Schema using LLM- A web app interface where get input file from a user and gives a metadata as an output using large language model. Technologies Used: Python, Ollama, API, Github, Streamlit, Ngrok. GitHub – https://github.com/teman67/LLM_Metadata

· Hackathon 2024 March; World Happiness Day! The Gratitude Wall celebrates World Happiness Day by creating a space for sharing gratitude. This online platform invites users to anonymously express thanks, uplifting stories, and moments of joy. Technologies Used: HTML, CSS, JavaScript, Bootstrap, Agile. GitHub - https://github.com/teman67/Gratidudes

· Hackathon 2023 December; Secret Santa. Our project offers Users the opportunity to send warm wishes and season's greetings to family, friends, neighbors, work colleagues. Technologies Used: HTML, CSS, JavaScript, Bootstrap. GitHub - https://github.com/teman67/team9-hackathon-december

Work Experiences

Jun 2024 – Current
Semantic Web Developer (LivMatS)
University of Freiburg | Freiburg, Germany

· Developed and maintained ontologies for adaptive material systems, enhancing data interoperability and integration across multidisciplinary projects, particularly in the field of material science.
· Implemented integration protocols with existing ontologies, including BFO (Basic Formal Ontology), facilitating seamless cross-disciplinary data sharing and collaboration within material science.
· Ensured adherence to OWL and RDF standards, increasing the compatibility and reusability of ontologies, promoting widespread adoption in the material science community.
· Leveraged ontologies for data linking and automated reasoning within material science datasets, improving data analysis efficiency and enabling more accurate predictions.
· Annotate research publications and experimental data with semantic metadata to improve discoverability and accessibility.
· Infrastructure Setup: Configure electronic lab notebooks like openBIS for efficient data management.
· LLM and Ollama Integration: Apply LLMs and Ollama technologies to enhance semantic analysis and metadata schema.
· Web Application Design: Create a web application leveraging LLMs for metadata schema management.

SKILLS

- Technologies: HTML5, CSS3, JavaScript, Python
- Databases: MySQL, Postgres
- Frameworks: Django, jQuery, Bootstrap
- Version Control: Git, Github
- Workspace: Vscode, Codeanywhere, Gitpod
- OS: Windows, Linux, WSL
- Agile Software development
- Semantic Web and Ontology, RDF, OWL, RDFS
- Data Analysis: Descriptive Statistics, Statistical analysis, Statistical Tests, Data visualization, Exploratory data analysis, Data manipulation
- Machine Learning: NumPy, Pandas, Seaborn, Matplotlib, Plotly, Regression, TensorFlow, SciKit Learn, Convolutional neural network (CNN), Feature-Engine
- Large Language Models (LLMs), Ollama
- API: Ngrok
- Cloud Deployment: Heroku app
- Data Visualization: Streamlit app

LANGUAGES

- English | Advanced (C1)
- Persian | Native
- German | Intermediate (B1)
  - Presently enrolled in a German language course.

ADDITION INFORMATION

- Scientific Publications list: https://orcid.org/0000-0002-7892-3513
- Currently learning: Node.js, and React.js

Jul 2021 **Scientific Researcher**

Jul 2023 **Fraunhofer IWM** | Freiburg, Germany

· Analyzed complex datasets to identify key trends, contributing to advancements in material science, particularly in the atomistic simulation of perovskite solar cells, leading to a increase in research efficiency.
· Conducted large-scale atomistic simulations using high-performance computing resources to optimize perovskite solar cell efficiency, reducing computational processing time by 25%.
· Published 2 research papers on perovskite solar cells in high-impact peer-reviewed journals, significantly contributing to the scientific community's understanding of solar cell efficiency improvements.
· Presented research findings on perovskite solar cell simulations at 2 international conferences, fostering collaborations with industry partners and leading to 2 joint research projects focused on experimental validation.
· Mentored and supervised 3 graduate students and research assistants, providing guidance in experimental design, data analysis, and manuscript preparation, resulting in 2 successful thesis defenses and contributions to the perovskite solar cell project.

Oct 2020 **Parental Leave and Relocation**

Jul 2021

Sep 2018 **Postdoc Researcher**

Sep 2020 **Uppsala University** | Uppsala, Sweden

· Collaborated with interdisciplinary teams to integrate theoretical insights with experimental observations, guiding the design and synthesis of functional materials, particularly focusing on atomistic simulations of gold intercalation on graphene/SiC, resulting in 3 new material prototypes.
· Presented research findings on gold intercalation on graphene/SiC at 2 national and international conferences, fostering collaborations with academic and industrial partners, leading to 3 funded research initiatives.
· Conducted independent research projects on the properties of gold intercalation on graphene/SiC, resulting in 3 publications in peer-reviewed journals and significant recognition within the scientific community.

References

- Dr. Daniel Urban, Materials Modeling Group, Fraunhofer Mechanics of Materials IWM, Freiburg, Germany. Email: daniel.urbaniwm.fraunhofer.de, Telephone: +49 761 5142 378
- Prof. Karin Larsson, Professor at Department of Chemistry - Ångström Laboratory, Inorganic Chemistry, Uppsala, Sweden. Email: Karin.Larssonkemi.uu.se, Telephone: +46 703 903750
- Dr. Daryoosh Dideban (My Ph.D. Supervisor), Associate Professor of Electronic Engineering Faculty of Engineering, University of Kashan, Kashan, Iran. Email: didebankashanu.ac.ir, Telephone: +98 913 361 7054