

Submitted to Amentum for ARPA-H STATS

NAME	JOB TITLE	PWS Tasks
Neda Bostani	ITDI - Intermediate Data Scientist	7.1.2; 7.1.10; 7.1.16; 7.4.5; 7.5.1; 7.5.5

Job Responsibility	Qualifying Skills
Data Analysis & Insights – Analyze internal data to generate insights and support decision-making across the agency.	<ul style="list-style-type: none"> · Led global data science teams at HP and the World Bank, delivering insights from large-scale datasets. · Developed predictive analytics models, scenario modeling, and forecasting for business and economic applications. · Created interactive dashboards and reporting tools to track KPIs and business performance.
AI/ML Development – Design and implement machine learning models and AI solutions to optimize agency operations.	<ul style="list-style-type: none"> · Built six Artificial Neural Network (ANN) models with 95-100% accuracy for predicting student learning outcomes. · Applied machine learning algorithms to customer behavior analysis and marketing optimization. · Integrated Big Data analytics and external economic indicators into predictive models for strategic planning.
Policy & Strategy Development – Research and develop AI and data governance policies to ensure compliance with federal standards.	<ul style="list-style-type: none"> · Co-authored World Bank policy reports on AI-driven education financing and digital infrastructure. · Provided AI and data governance recommendations for emerging technology policies in education and finance. · Advised international stakeholders (e.g., UNESCO, Gates Foundation) on AI strategy implementation.

Education

PHD, Major: Theoretical Physics, Minor: Statistics, Shiraz University	May 2008
MS, Physics, Beheshti University	2004
BS, Physics, Shiraz University	2001

Experience

HP, Big Data Strategic Initiatives Lead	March. 2023 – September 2024
<ul style="list-style-type: none"> · Assess and monitor ROI and risks of short- and long-term projects, conduct market and trend analysis, and evaluate the use cases, feasibility, and potential benefits of incorporating emerging innovative tools. · Lead stakeholder engagement and cross-team collaboration, develop effective dashboards, governance cadences, and implement reporting systems aligned with stakeholder needs and business strategies. · Conduct in-depth research on customer journeys to design, implement, and manage scalable, predictable, and repeatable lifecycle retention programs aimed at growth and customer satisfaction. · Leverage research and NLP models to analyze customer support data, surveys, and social media feedback, conduct competitive analysis across brands, teams, and geographies to uncover customer pain points, needs and preferences. 	

HP, Big Data Ink Data Science Lead**May, 2022 – March 2023**

- Lead of Insights lab, a global team of data analysts, data engineers, & data scientists deriving insights & developing next-gen capabilities of customer usage behavior across home printing devices.
- Advise roadmap of multiple predictive capabilities, including development and shift from printer lifetime value algorithms to customer lifetime value algorithms, where modeling encompassed customer propensity for certain actions and future behavior predictions.
- Develop innovative Big Data reporting by integrating external factors (e.g., GDP, inflation, digitalization factors such as internet infrastructure and speed) into scenario models, enabling weekly country tracking reports for the VP.
- Spearhead the use of data and ML predictive models to inform targeted marketing and customer messaging, including deploying recommendation engines (printer & Instant Ink plan), predictive low-on-ink alerts, and look-a-like profiles.
- Conduct problem solving sessions with internal stakeholders, such as marketing and commercial teams, on identifying the right methodology and data sources that need to be managed and analyzed for specific campaigns.

World Bank, Sr. Data Scientist, Analytics / Sr. Consultant**Oct. 2015 – May 2022**

Lead Visualization and Analytics initiatives of ITSES Development Data Group—Tableau and Power BI

- Work closely with business, engineering, and analytics teams to set the vision and roadmap. Example includes top World Bank KPI reporting such as analyzing WB- Facebook social engagements; Women, Business and Law dashboard offer objective and measurable benchmarks toward gender equality; and IFC Power Market Database.

Machine Learning Project to Identify Reliable Predictors of Learning Outcomes for result-Based Financing

- Conduct comprehensive analysis on large and complex household, child and school survey database—the Young Lives, to identify the key drivers of student learning.
- Build six Artificial Neural Network (ANN) models to predict different outcome variables for high and low performers in Mathematics and Vietnamese. Achieve between 95 percent and 100 percent accuracy.

Data Migration to Cloud, Data Validation and Visualization for International Evaluation Group (IEG)

- Contribute to the improvement of IEG's data infrastructure by:
- Develop requirements for the operational, corporate, and development data needed for evaluative work.
- Develop semi- automated monitoring tools for gap analysis and data validation.
- Support the migration of IEG's Data Mart SQL Server database to ITS' cloud-based data architecture.
- Validate, reconcile, aggregate, and transform and finally disseminate the data through Power BI tool.

Micro-economic Data Analysis and Analytical Research on Practices to Raise Education Quality in East Asia and Pacific (EAP)

- The result is a 298 pages flagship report with detailed micro-economic analysis of the education system of 17 countries of the region.
- Utilize several large-scale educational assessments databases, using IBM software SPSS, to measure and monitor across-country variation and with-in country inequality in student learning outcome.

Leading Analytical Taskforce of Geospatial Data (GIS) Platform of the World Bank Group and Geospatial Risk Application of International Finance Cooperation

- Develop overall definition and strategy, perform current state, needs and progress analysis for the data and analytical aspect of the platform to increase utilization of geo data and analysis. This exercise required in detail studying of several financial and econometric databases such as Bloomberg, SNL, Doing Business, TC360, WDI and IMF International Financial Statistics.

Use Cases Development and Providing Advice on the Application of Emerging Technologies Specifically Artificial Intelligence in Education Sector in Vietnam

- Provide research and advice on the use of adaptive learning tools and intelligent tutoring system for the students and teachers in Vietnam. Define project requirements from interactions with government officials, academia and other stakeholders, and Initiate linkages and partnerships between them and external companies with expertise in implementing these learning intelligent tools in different countries.

Methodology Preparation and Implementation of Science, Technology and Innovation (STI) Roadmaps

- Work closely with client countries, UN agencies (e.g. UNCTAD, UNESCO), national academies and external contributors and donors (e.g. Gates Foundation) to strengthen country level and international level diagnostics and policy planning for harnessing STI to achieve the SDGs.
- Conduct literature reviews and other desk research to synthesize relevant experiences and develop methodological proposals related to international STI roadmaps, especially related to rapid technological changes and national-international policy responses.

Science Diplomacy Center, American Association for the Advancement of Sciences, AAAS

Washington DC, U.S. – Research Scholar/Science Diplomat

Mar. 2014 – Sep.2015

- Lead efforts to enhance science and technology cooperation with the Middle East, develop international scientific exchanges and strategic partnerships, expand the areas of scientific work where it engages developing countries.
- Create a forum for thought and analysis, initiate multi-lateral cooperation among higher education institutions between the U.S. and Middle Eastern countries of Saudi Arabia, Jordan, Turkey and UAE on common health issues related to the migration with the main goal of promoting peace in the region.

Institute of High Energy Physics (IHEP) – Beijing, China – Postdoctoral Fellow

2009 – 2014

IHEP, Chinese Academy of Sciences, is the most comprehensive and internationally renowned research center in China.

- Develop analytical models to study black holes, perturbation cosmology and modified gravity theories.

SELECTED PUBLICATIONS

Identifying Reliable Predictors of Educational Outcomes through Machine-Learning Predictive Modeling
M. Musso, E. Cascallar, N. Bostani, and M. Crawford. *Frontiers in Education* (2020).

Are Teaching Practices and School Characteristics Reliable Proxies for Learning Gains? A Results-based Approach to Financing of Education through Machine-Learning Predictive Modeling.
M. Musso, E. Cascallar, N. Bostani, and M. Crawford. *World Bank Working Paper* (2018)

Growing Smarter: Learning and Equitable Development in East Asia and Pacific
World Bank East Asia and Pacific Regional Report (2017)