Alex Bumbalov

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📍 San Diego, CA (Open to remote or relocation)

PROFESSIONAL EXPERIENCE

Research Assistant | Falzarano Family Caregiving Lab, USC | San Diego, CA
December 2024 – Present

- Led the design and organization of digital resource platforms, creating user-friendly layouts and content structures for study participants.
- Analyzed complex behavioral and survey data using Python and statistical tools (NumPy, Pandas, Matplotlib) to generate actionable insights on dementia and family caregiving.
- Supported research on family caregiving, dementia, and caregiver well-being through data collection, analysis, and literature review, improving the accuracy and relevance of study deliverables.
- Collaborated with a multidisciplinary team to translate findings into practical interventions aimed at improving caregiver outcomes.
- Contributed to ongoing studies by assisting with protocol design, IRB compliance, and manuscript preparation for academic publications.
- Developed and implemented engagement analytics tracking for participant portals, ensuring data-driven improvements to user experience.

CASp Consultant | SBC Group | Chico, CA
December 2019 – January 2024

- Conducted accessibility reviews and digital reporting, ensuring clarity and intuitive presentation of findings for clients.
- Assisted in preparing CASp reports, proposals, and client deliverables, supporting certified specialists in inspections and evaluations.
- Logged hours and travel for project billing and coordinated with clients for scheduling and follow-ups.
- Gained experience working with public infrastructure and regulatory compliance for accessibility in built environments.

Cognitive Science & Machine Learning Projects | UC San Diego
2019 – 2023

- Designed and implemented user-centric digital experiments and data analysis pipelines, applying machine learning techniques to behavioral datasets.
- Developed interactive dashboards and visualizations for research data, utilizing Python libraries (NumPy, Pandas, Matplotlib, scikit-learn).
- Built and maintained web-based tools and research interfaces using HTML and CSS, ensuring responsive layouts and clean UI design.
- Applied UX principles and human behavior insights to optimize the structure and presentation of web content.
- Conducted data preprocessing, feature engineering, and predictive modeling to identify behavioral trends and generate actionable insights.

EDUCATION

University of California, San Diego (UCSD) | San Diego, CA
June 2023

- B.S. in Cognitive Science with a specialization in Machine Learning and Neural Computation
- Minor in Computer Science

RELEVANT COURSEWORK

- **Machine Learning** – Algorithms, model training/testing, classification, clustering.
- **Data Analysis & Visualization** – Python (NumPy, Pandas, Matplotlib), exploratory and statistical analysis.
- **Computational Models of Cognition** – System-level modeling of decision-making and behavior.
- **Human-Computer Interaction** – Usability, safety-critical interfaces, human factors.
- **Neurobiology of Cognition / Neuroanatomy and Physiology** – Understanding human response systems, useful for safety behavior modeling.
- **Web Application Development / Frontend Web Design** – Built responsive dashboards and user interfaces.

SKILLS

Research & Analysis

- **Quantitative & behavioral data analysis**
- **Survey research, report writing, SPSS (familiar)**
- **Data visualization: PowerPoint, Excel, Matplotlib**

Communication & Project Support

- **Strong presentation and client communication skills**
- **Experience supporting research reports and business proposals**
- **Comfortable collaborating across teams and communicating deliverables clearly**

Technical Tools

- **Programming:** Python (NumPy, Pandas), R, SQL, Java, C++, MATLAB
- **Tools:** Excel, PowerPoint, Qualtrics, Git
- **Design/UI:** Basic HTML, CSS, JavaScript for dashboards
- **Machine Learning:** Proficient in supervised and unsupervised learning algorithms, neural networks, deep learning architectures (CNNs, RNNs), natural language processing, and reinforcement learning.
- **Neural Computation:** Familiar with principles of neural networks and biologically-inspired learning algorithms.