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HUMAN LANGUAGE TECHNOLOGY

DEPARTMENT OF DEFENSE

Objective

Seeking a development tour to learn about commercial approaches to AI/ML on language processing systems.

Skills and Credentials

Systems Engineering & Technical Program Management

- Leading complex AI/ML, natural language process, & language technology initiatives
- Managing several multi-million dollar budgets for technical programs
- Integrating AI and machine learning to language processing workflows
- Leading technical teams throughout product life-cycle
- Overseeing customer requirements gathering, documentation, and user acceptance testing
- Directing UX/UI research, particularly for data visualization

Programming

- Experienced developing and deploying machine learning and natural language processing models
 - Strong programming skills in Python and machine learning libraries such as PyTorch, TensorFlow, scikit-learn, Keras; familiar with Java, Perl (C++, R)
 - Proficient in NLP tasks such as text classification, entity recognition, question answering and summarization with NLP libraries: spaCy, HuggingFace, NLTK
 - Experience with deep learning architectures and transformer-based language models like BERT, GPT and other LLMs.
- Knowledgeable in full-stack web development: HTML, CSS, and Javascript; MEAN & MERN, Flask
- Proficient with developer tools: command line scripting, VSCode, Git, Jupyter, Jira, Confluence
- Familiar with CI/CD DevOps tools: Docker, Jenkins, Kubernetes
- Experience in building, training, tuning, and deploying machine learning models on AWS.
- Skilled in a wide array of commercial and U.S. government IT applications and databases

Subject matter expertise

- Professionalized cryptologic linguist and translator Chinese and Japanese (native-level fluency)
- International trade and economics, Asian defense and security issues
- Asian culture, literature, and art
- Pedagogy: 20+ years teaching experience in languages and technology
- Signals Intelligence

Credentials

- Global Information Assurance Certification (GIAC), Machine Learning Engineer (GMLE) certification
- eCornell Natural Language Processing With Python Certification
- Nielsen Norman Group UX Certification
- AWS certification Machine learning engineer (5 certifications including Cloud Practitioner and Machine Learning Specialty)

- Project Management Institute (PMI) Project Management Professional (PMP) Certification
- TOP SECRET (TS)/Sensitive Compartmented Information (SCI) and Special Intelligence (SI) clearance since 2011; updated in 2016.
- Passed NSA Special Background Investigation (SBI) and full scope

Systems Engineering & Technical Program Management Projects

Human Language Technology Program Mission Lead 2022-2023

NSA co-lead for Language Data Solutions campaign, 2019-2024

- Directed natural language processing and human language technology (NLP/HLT) innovation cell for the Intelligence Community. Managed R&D budget for artificial intelligence and machine learning capabilities. Spearheaded the application of key technologies including machine translation, speech-to-text, optical character recognition, and named entity recognition.

Entity Database Mission Tool Lead, 2018-2023

- Spearheaded complex and expansive team effort to develop and deploy an IC-wide target knowledge management system. Pushed development team to build revolutionary architecture including the integration of knowledge graphs that provides robust entity management solutions. Pioneered improvements to the tool's structure and performance resulting in 45,000+ monthly users.

Computer Assisted Translation (CAT) Mission Product Lead, 2018-2019

- Led NSA Research and Capabilities Directorates joint development effort to launch IC-wide CAT user interface and translation memory database. Shepherded the project through a highly ambiguous development process, which resulted in delivering the tool on time and on budget.

Professional Experience

Senior Technical Development Program, National Security Agency

Language and Data Solutions Lead, National Security Agency

U.S. Intelligence Community, 2019-present

Video, Image, Speech, and Text (VISTA) Operations China Lead, National Security Agency

Enterprise Discovery Operations, 2021-present

Multi-Disciplined Cryptologic Language Analyst and Reporter, National Security Agency

Office of East Asia and Pacific, 2016-2021

Cryptologic Liaison Officer for Executive Office of the President, National Security Agency

Signals Intelligence Directorate Office of Engagement, 2014

Computational Linguist and Programmer, National Security Agency

Office of Information Semantics Research, 2013

Language Analyst Development Program, National Security Agency

Signals Intelligence Directorate, 2011-2012

Assistant Professor, Beloit College

Modern Languages and Literatures and Comparative Literature, 2007-2011

Visiting Assistant Professor, Bucknell University

Department of East Asian Studies, 2006-2007

Instructor, Columbia University

Department of East Asian Languages and Cultures, 2002-2006

Education

Ph.D., Columbia University, New York, NY, 2007

Department of East Asian Languages and Cultures

Research Fellow, Kansai University, Osaka, Japan, 2003–2005

Department of Japanese Literature

M.Phil., Columbia University, New York, NY, 2003

Department of East Asian Languages and Cultures

M.A., Kansai University, Osaka, Japan, 1997–1999

Department of Japanese Literature

Research Student, Kobe University, Kobe, Japan, 1996–1997

Department of Cross Cultural Studies

B.A., University of Georgia, Athens, Georgia, 1991–1995

Departments of Comparative Literature & Japanese Literature

Skills Checklist

PMP

Coding skills

Developer tools

- Experience in an Agile working environment
- Project management tools: Jira, Confluence
- Linux environment
- Jupyter
- git
- terminal
- SSH
- Shell scripting
- , Azure DevOps, etc.)

Frontend

- Web basics:
 - HTML, CSS, JavaScript
 - Flexbox & Grid
 - Material UI, Bootstrap, Tailwind
 - AJAX
 - jQuery
 - JSON
- MERN stacks (MongoDB, Express, React, Node)

- and familiar with MEAN (Angular)
 - Redux
 - Typescript
- Design software: figma
- Web hosting & backend content management: AWS, Google Cloud, Microsoft Azure (including certification in machine learning), netlify, wordpress

Backend

- Python
 - Standard libraries: pandas, NumPy, matplotlib, seaborn, Bokeh, BeautifulSoup, SciPy, etc.
 - Machine learning and deep learning libraries: TensorFlow, SciKitLearn, PyTorch
 - NLP libraries: spaCy, HuggingFace, NLTK
 - Web frameworks: Django and Flask
- Fluency in both structured and unstructured data (SQL (PostGres), NOSQL), particularly MySQL and MongoDB
- Experience with machine learning pipelines (Azure ML)
- Understanding of knowledge graphs
- Maybe
 - DevOps tools
 - Knowledge of Docker, Jenkins, Kubernetes,
 - Data processing frameworks
 - Apache Spark (PySpark / Spark SQL) & Hadoop
 - Java virtual machine (JVM) language (e.g., Scala)
 - designing and maintaining Extract, transform, load (ETL) pipelines including manipulating and cleaning diverse data types (i.e., parsing XML documents and/or working with JSON)
 - business intelligence products such as Table
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- experience leading the design/implementation of ML/AI models and delivering ROI.
- understanding of pre-trained language models like BERT and GPT
- developing and deploying machine learning models

- Data Modeling and Data Governance experience
- Experience driving outcomes in Agile delivery environments

Projects

- VISTA vision
- My CV
- Japanese Ghosts and Monsters
- Family