Onur Kara | CV

Data Scientist and NLP Expert

Status: Senior Data Scientist, Fiserv, Inc.
Fields: RD, Product Innovation, Natural Language Processing (NLP), Machine Learning (ML)
Techs: Python, Spark, AWS, MATLAB, Bash, Git, SQL-literate
Personal site:

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Summary

Data scientist and overall learning enthusiast. I have a passion for machine learning, which I frequently exercise across a spectrum of disciplines and applications. I have many interests and skills that I am able to effectively adapt and undertake projects in various disciplines.

Experience

Senior Data Scientist (Director) - Data Science - Fiserv, Inc Feb 2021 - Present

· Communicate with stakeholders to understand the challenges they face and present clear data to convince them of clear strategies and solutions

· Develop and apply machine learning models in order to best service enterprise clients and derive relevant insights for strategies with respect to consumer behavior prediction

· Build and lead internal teams and external partners to provide comprehensive solutions

Advisor/Former Head of Data Science/Co-founder - Hindsight Tech Solutions June 2017 - present

· Founded company and responsible for creating all 15 products currently on the market

· Heavily focused on NLP, in particular developed many (general and domain specific) state of the art named entity recognition and text classification pipelines

· Created content/context aware targeted marketing tools that rely on anonymized session-based historical data along with current page content to jump start cold-start problems in the adTech space

· Developed highly accurate system utilizing few-shot text classification for performing automated labeling of large scale web-scraped data.

· Developed few-shot scheme for anomaly detection in text classification training sets to identify potential misla-belled data.

Senior Consultant - Data Science - The DarkHorse Feb 2021 - Aug 2021

· Provided general data science and machine learning consulting for computer vision (CV) based sports recruitment company

· Trained new employees and interns for various mission critical tasks

· Advised on the development strategy and technical approach for developing a future recommendation engine unique to the user group and app

· Instructed/guided data engineering team during ideation, research, and development stages.

Consultant and Advisory Board Member - Neotic Feb 2019 - Feb 2020

· Consultant for algorithmic trading firm as they were looking to implement machine learning and NLP techniques in order to improve their stock forecasting algorithm.

· Advised on general strategy for implementing NLP techniques.

· Designed an algorithm that would learn stock performance indicators from a large number of news sources for a given stock. The algorithm is intended to predict short term future stock performance.

· Instructed/guided data engineering team during development stages.

Graduate Research Assistant/Phd Student IREAP, University of Maryland June 2013 - Jan 2018

· Conducted research in the field of theoretical statistical physics – Largely focused on building simulations of lattice models to study of behavior critical and interfacial phenomenas.

· Developed various complex lattice model simulations and experiment suites that model a wide range of systems and phenomena

Research Coordinator Mount Sinai School of Medicine May 2008 - Aug 2010

· Designed and carried out experiments for research in the field of immunohistochemistry, specifically addressing the mis-localization of nucleolin in BRCA-1 patients.

· Wrote DNA sequence analysis software which was presented at a workshop and its proceedings, and continues to be used by researchers at MSSM

Education

Graduated as M.S. Physics - University of Maryland, College Park June 2013 - Jan 2018

· Left Ph.D.program - Developed simulations and software for modeling critical phenomena in n-state systems

Post-Graduate in Applied Math and Computer Science - Columbia University Jan 2009 - May 2011

· Research assistant in the Lambert Group studying total synthesis organic reactions

Graduated as B.S. Chemistry and Biochemistry - Rutgers University Sept 2003 - May 2008

· Dean's List 5 of 8 semesters

Additional Projects

Innovation R&D Professional Accomplishment Sept 2019

· Sole contributor to my company's technology that placed 3rd in NYC Media Lab 2019 Startup Competition which consisted of over 100 startups. The system was developed using a knowledge graph-based technology whose function was to 'wikify' news articles on the fly by automatically identifying key concepts in a story and attaches to them internal related content and background information on the topic and main characters and events. With readers arriving direct to article through social or search, my solution made articles more connected than ever to other internal related content, increasing time on site and page views per session. We went to market with this product and serviced clients in the digital news/media space. Companies such as Forbes Magazine and Vice News were some of our first clients

· Please visit the following link to learn more about the competition: NYC Media Lab 2019

Publications

Kara O, Sehanobish A, Corzo HH
Fine-tuning Vision Transformers for the Prediction of State Variables in Ising Models
35th Conference on Neural Information Processing Systems, Fourth Workshop on Machine Learning and the Physical Sciences, NeurIPS, 2021

Corzo HH, Sehanobish A, Kara O
Learning Full Configuration Interaction Electron Correlations with Deep Learning
35th Conference on Neural Information Processing Systems, Fourth Workshop on Machine Learning and the Physical Sciences, NeurIPS, 2021

Kara O, Chen F, Hug D, Jenkins T, Safari S, Berger S
A Survey of Relation Extraction Techniques Using Hybrid Classical and State of the Art Methods
Proceedings of the BioCreative VII Challenge Evaluation Workshop, Workshop Proceedings, 2021

Sehanobish A, Corzo HH, Kara O, van Dijk D
Learning Potentials of Quantum Systems using Deep Neural Networks
Proceedings of the AAAI 2021 Spring Symposium on Combining Artificial Intelligence and Machine Learning with Physical Sciences, Stanford, CA, USA, March 22nd - to - 24th, 2021. CEUR Workshop Proceedings 2964, 175, CEUR-WS.org 2021, `http://ceur-ws.org/Vol-2964/article_175.pdf`

Genecin I, Kara O, Laitman JT, Reidenberg JS, Skrabanek L, Bergemann AD
Base Composition Changes Indicate Biased Gene Conversion is a Major Factor in the Evolution of the Fam53A gene
FASEB J., 24, 449, 2010

Choromanski K, Chen H, Lin H, Ma Y, Sehanobish A, Jain D, Ryoo MS, Varley J, Zeng A, Likhosherstov V, Kalashnikov D, Sindhwani V, Weller A
Hybrid Random Features (Acknowledgements – Onur Kara)
10th International Conference on Learning Representations, ICLR 2022, April 25-96, 2022,`https://openreview.net/pdf?id=EMigfE6ZeS`

Presentations

Kara O, Chen F, Hug D, Jenkins T, Safari S, Berger S
Biomedical Relation Extraction: Hybrid Approaches
Proceeding of BioCreative VII Workshop (Extended Abstract - Video Poster), Task 1, DrugProt:Text mining drug/chemical-protein interactions, November 8-10, BioCreative VII, 2021

Kara O, Sehanobish A, Corzo HH,van Dijk D
Learning Potentials of Quantum Systems using Deep Neural Networks
IOP Quantum 2020 Conference, Session on Quantum Computing and Quantum Simulation, [Speaker: Abstract Presentation], October 19 2020

Kara O, Nordsiek F, Lathrop DP
Electrification of Shaken Granular Flows as a Model of Natural Storm Charging
American Geophysical Union, Fall Meeting, December 2015 `https://ui.adsabs.harvard.edu/abs/2015AGUFMAE31B0441K/abstract`

Lathrop DP, Stone D, Adams MM, Kara O
Magnetic Field Gain in a Laboratory Model of the Earth's Outer Core
American Geophysical Union, Fall Meeting, December 2015 `https://ui.adsabs.harvard.edu/abs/2015AGUFM.P33D..08L/abstract`

Kara O, Nordsiek F, Lathrop DP
Electrification of Shaken Granular Media
The 68th Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD), November 22-24 2015 `https://ui.adsabs.harvard.edu/abs/2015APS..DFDL10009K/abstract`

Stone D, Adams A, Kara O, Lathrop D.P.
Hydromagnetic Dynamics and Magnetic Field Enhancement in a Turbulent Spherical Couette Experiment
The 68th Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD), November 22-24 2015 `https://ui.adsabs.harvard.edu/abs/2015APS..DFDR30009S/abstract`

Skills and Technical Proficiency

regex, pytorch, CUDA, numpy, scipy, pandas, BERT, transformers, deep learning, ElasticSearch, NoSQL, scikit-learn, stochastic processes/analysis, data visualization, interactive dashboard development, streamlit, data/dataset discovery, vision transformers, vit,data mining, text parsing, web crawling, SPRQL, network science, knowledge graphs, reinforcement learning, google cloud, GCP, data cleaning, plotly, Tensorflow, keras, mathematical modeling, statistical modeling, algorithm development, AWS (EC2, RDS, S3, SageMaker, Textract), SQL, quantum potential neural networks, statistical physics, machine learning, natural language processing, spaCy, NLTK, polyglot, linux, computational linguistics, computational science, computational physics, computational chemistry, shell scripting, targeted marketing, adtech