Vladislav Serkov

Senior Machine Learning Engineer I Deep Learning Expert

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Summary

Senior Machine Learning Engineer with deep expertise in Python and deep learning, notably in computer vision applications. Demonstrated ability in deploying machine learning products, improving model metrics, and reducing operational costs. Skilled in leveraging multimodal techniques to exceed project benchmarks, with a history of delivering complex AI solutions in collaboration with colleagues.

Key Skills & Technologies

- Deep Learning: Design, optimization, and implementation of neural networks for vision, point cloud, and text data.
- Computer Vision: Proficiency with CNNs, object detection, image segmentation, sensor fusion, and OpenCV.
- Machine Learning Tools: Hands-on experience with PyTorch, Scikit-learn, AWS Sagemaker, and HF Transformers.
- MLOps: Model deployment with BentoML, Flask, experience with vector databases and PostgreSQL, CI/CD and infrastructure as a code with Ansible.
- Multimodal LLMs: Practical application of BERT, fine-tuning Stable Diffusion with LORAs, CLIP embeddings, and prompt engineering.
- Languages and tools: Proficient in Python, SQL, Bash, with practical use of Docker and Git.
- Team Leadership: Guided junior scientists and supported tech development effectively.

Professional Experience

Senior Deep Learning Engineer at SharperShape, September 2019 - Present

- As a part of a cross-functional team achieved a 50% reduction in 3D point cloud processing time through a new graph neural network design for point cloud segmentation.
- Streamlined model training processes, reducing time from 7 days to 20 hours and cutting associated costs by 80%.
- Enhanced object detection, classification, and segmentation pipelines, increasing labelling team efficiency by 50-70%.
- Developed a tree species classifier using hyperspectral data, achieving a 30% higher accuracy rate compared to the RGB baseline.
- Decreased the false negative rate in object detection by 30% through innovative LiDAR and RGB data fusion.
- Refined RGB camera and LiDAR sensor calibration by 15% via advanced edge and line detection algorithms.
- Contributed to team development by delivering over 10 educational sessions on insights and best practices.

Deep Learning Engineer at Dexpa, November 2018 - August 2019

- Designed a neural network for time-series forecasting that surpassed human accuracy benchmarks by 3%.
- Conducted research on state-of-the-art methodologies for financial markets.
- Successfully mentored an intern to transition to a full-fledged data scientist role within one year through practical project involvement.

Senior Data Scientist at Stream, DCA, Flocktory, Mamsy, March 2014 - October 2018

- Enhanced a high-load real-time bidding system, significantly increasing system profitability.
- Assembled a comprehensive embedding catalog of 100M web pages, facilitating efficient web page categorization.
- Clustered 300M users according to interests using advanced data analysis techniques.
- Implemented a customer purchase matching tool by establishing a unified product taxonomy with NLP methodologies.
- Improved banner ad placement effectiveness using reinforcement learning strategies.

Papers

ECLAIR: A High-Fidelity Aerial LiDAR Dataset for Semantic Segmentation (USM workshop @ CVPR2024) - Iaroslav Melekhov, Anand Umashankar, Hyeong-Jin Kim, Vladislav Serkov, Dusty Argyle

Education

National Research University Higher School of Economics

MSc in Economics, September 2008 - August 2013