Recep Ahmet **Sarıtekin**

Machine Learning Developer

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Projects

Hark - Real-Time Speech-to-Text-to-LLM Application

github.com/us/hark

Lead ML Developer

- Developed a sophisticated real-time speech-to-text application integrating OpenAI's GPT-4 for enhanced transcription and live interaction.
- Implemented multi-language support and meeting summarization features, broadening the application's versatility and user base.
- Engineered a user-friendly interface with streamlined controls, making the app accessible even to non-technical users.
- Integrated advanced audio processing features such as noise suppression and automatic gain control for superior transcription quality.
- **Client feedback:** *"Hark has made live transcription and summarization incredibly easy. The integration with GPT-4 is seamless and provides impressive real-time insights."*
- **Rating: 5.00/5.00**

TrOCR on MathWriting - Handwritten Mathematical Expression Recognition

github.com/us/trocr_mathwriting

ML Developer

- Fine-tuned Microsoft's TrOCR model on the MathWriting dataset, achieving high accuracy in converting handwritten mathematical expressions to LaTeX.
- Developed data preprocessing scripts for efficient InkML-to-image conversion, streamlining the dataset preparation process.
- Integrated the model into a Hugging Face repository, making it accessible for researchers and developers.
- Enhanced model performance by leveraging Seq2SeqTrainer and state-of-the-art augmentation techniques tailored for mathematical handwriting.
- **Client feedback:** *"The accuracy and efficiency of the TrOCR model on MathWriting are exceptional. It significantly simplifies handwritten mathematical expression recognition."*
- **Rating: 5.00/5.00**

Image to Sketch in Hard Way - SVG Sketch Conversion Tool

github.com/us/image-to-sketch

Lead ML Developer

- Developed a robust image-to-SVG sketch conversion application utilizing advanced segmentation models and image processing techniques.
- Integrated the Segment Anything Model (SAM) for automatic mask generation and precise control over segmentation parameters.
- Designed a user interface with Streamlit, enabling easy customization and real-time previews of processed sketches.
- Implemented vectorization pipelines using Potrace for high-quality SVG outputs, supporting a wide range of use cases from digital art to technical illustrations.
- **Client feedback:** *"The level of control and quality achieved with this tool is remarkable. It's perfect for turning images into crisp, scalable vector sketches."*
- **Rating: 5.00/5.00**

Patent Similarity Search App - LLM and RAG Integration

github.com/us/patent-similarity-rag

ML Developer

- Developed an AI-powered patent similarity search tool leveraging LangChain and OpenAI models for generating optimized search terms.
- Implemented a Retrieval-Augmented Generation (RAG) system to enhance the precision and relevance of patent search results.
- Integrated SerpAPI for seamless querying of Google Patents, providing users with comprehensive patent analysis.
- Designed a dynamic interface using Streamlit for real-time search configurations and visualizing similarity scores.
- **Client feedback:** *"The app's ability to pinpoint relevant patents with such high accuracy has transformed our patent search process. The LLM integration is outstanding."*
- **Rating: 5.00/5.00**

Experienced AI Developer for Open Source Vocal Separation Model Implementation

Lead ML Developer — *February, 2024*

- Implemented a state-of-the-art, multimodal open source vocal separation model in a PyTorch framework within a Docker environment, showcasing advanced AI development skills.
- Deployed the model on AWS SageMaker for asynchronous inference, focusing on optimization and scalability to handle extensive workloads efficiently.
- Integrated AWS Lambda functions and API Gateway, enhancing system responsiveness and facilitating seamless user interactions with the deployed model.
- Pioneered innovative AI solutions, translating complex algorithms into practical applications, demonstrating expertise in both AI and cloud services.
- **Client review:** *"Your innovative solutions and expertise in AI have significantly enhanced our project. Your work on the vocal separation model has set a new benchmark. We're excited about the future collaborations!"*
- **Rating: 5.00/5.00**

RAG Model Development with LangChain, LLamaIndex, ChatGPT -

ML Developer *January, 2024*

- Led the development of a RAG model leveraging LangChain, LLamaIndex, ChatGPT, and Claude model, enhancing the capabilities of information retrieval and knowledge integration.
- Designed and implemented advanced systems for image retrieval and vector indexing, contributing to the creation of a comprehensive knowledge-enhanced model.
- Achieved a significant milestone by successfully passing the rigorous pilot examination, underlining the effectiveness and innovation of the developed model.
- Demonstrated exceptional skills in AI development and model integration, setting a new standard in the field of retrieval-augmented generation.
- **Client review:** *"The RAG model has transformed our approach to information retrieval, thanks to your expertise and innovative thinking. Recep success in the pilot exam is a testament to the model's potential. Great job!"*
- **Rating: 5.00/5.00**

LLM-VM - Open Source Project by Anarchy AI *github.com/Anarchy-AI/LLM-VM*

Contributor and Effective Developer

- Contributed as a key developer to the LLM-VM project, an open-source initiative focused on virtual machine integrations with large language models (LLMs).
- Recognized as the most effective developer by the contributors' community, receiving rewards and a special jacket gift for outstanding contributions.
- Maintained and enhanced the project by addressing issues, reviewing pull requests, and ensuring the overall stability of the codebase.
- Actively engaged in project discussions and helped onboard new contributors to grow the open-source community.
- **Community feedback:** *"Your contributions have been pivotal in the success of LLM-VM. The project wouldn't be where it is today without your expertise and dedication."*
- **Rating: 5.00/5.00**

Implementing Latent Space Manipulation for Periodic Pattern Generation -

ML Developer *Dec 2023 - Feb 5, 2024*

- Utilized Stable Diffusion and DreamBooth models for innovative latent space manipulation, focusing on periodic pattern generation and style replication.
- Spearheaded the project to create unique, artistic patterns by copying the style of renowned artists, demonstrating expertise in AI-driven creative processes.
- Received a 5 out of 5 rating for exceptional project execution, speed, and the ability to convey complex concepts in an accessible manner.
- Praised for knowledge, quick turnaround, and effective communication, underscoring the ability to meet and exceed project expectations.
- **Client review:** *"Working with Recep was fantastic, he is extremely knowledgable, understood what I needed to create in Stable Diffusion and turned the job around extremely quickly and also helped to explain everything easily. I wouldn't hesitate recommending him or working with him again in future and look forward to the next project. Thank you!"*
- **Rating: 5.00/5.00**

Character Design and Stable Diffusion Fine-Tuning for Game Development -

ML Developer *October, 2023*

- Spearheaded the design of unique game characters by leveraging Lora for distinctive character aesthetics and integrating them with advanced AI technologies.
- Conducted extensive prompt engineering and fine-tuned the Stable Diffusion model to create highly detailed and visually compelling game characters.
- Collaborated closely with the game development team to ensure character designs aligned with game narratives, enhancing the overall player experience.
- Implemented iterative design and feedback loops to refine character models, ensuring they met high standards of creativity and technical execution.
- **Client review:** *"The characters Recep has created are not only visually stunning but also deeply integrated into our game's world. Your expertise in AI-driven design and ability to bring our vision to life has been invaluable. Thank you for your dedication and innovative approach!"*
- **Rating: 5.00/5.00**

Road Surface Image Shadow Removing with GAN -

ML Developer

- Worked on a GAN-based system to remove shadows from road surface images, specifically for crack detection purposes.
- Explored various inpainting and shadow removal models, implementing and fine-tuning them to enhance the accuracy of crack detection algorithms.
- Collaborated with a team to analyze road surface images, preprocess them, and develop GAN-based approaches to effectively remove shadows and improve the quality of the images.
- Conducted experiments to evaluate the performance of different models and techniques, identifying the most effective methods for shadow removal in road surface images.
- **Rating: 5.00/5.00**

Art Project: VideoGAN

ML Developer — *Jul 7, 2023 - Sep 23, 2023*

- Developed a Video Generator Network for an art project, utilizing machine learning algorithms to generate thought-provoking bomb shower videos.
- Criticized the defense industry through the artistic expression of the generated videos, highlighting societal concerns and promoting critical thinking.
- Applied advanced machine learning techniques, such as 'long-video-gan', 'stlyegan-V' to create visually striking and impactful videos that challenge conventional narratives surrounding the defense industry.
- **Client review:** *"We've been really satisfied with Recep's contribution to our project. His combination of professionalism, technical expertise, and easy-going nature has ensured a smooth collaboration. We highly recommend Recep for machine learning jobs. Looking forward to our next venture together!"*
- **Rating: 5.00/5.00**

DJ'ing with AI

ML Developer — *Feb 27, 2023 - Jun 5, 2023*

- Developed an AI-powered music set order system for DJs, optimizing playlists and ensuring seamless transitions between songs.
- Implemented a music clustering system to categorize songs based on audio features, facilitating efficient playlist creation.
- Created a set generator using machine learning algorithms to curate personalized and engaging music sets for different events and moods.
- **Client review:** *"Worked together on a hard challenge for sorting music based on numeric attributes and heuristics. Quite a challenging task. Recep's knowledge in music and technology was a great match. He surprised us with a creative solution to the problem."*
- **Rating: 5.00/5.00**

NLP Pipeline System

ML Developer

- Revolutionized NLP pipeline development with a highly flexible and scalable system consisting of interconnected nodes.
- Implemented a cutting-edge wrapper for state-of-the-art libraries, enabling seamless integration of any function as a node.
- Empowered users to easily train, evaluate, and visualize models within the pipeline system.
- Enabled effortless reusability and connectivity of all components, streamlining the development process.
- Designed with user-friendliness in mind, allowing non-technical users to easily control the system via a UML file.
- Integrated state-of-the-art data visualization libraries for clear and effective data representation.

Development of Deep Learning RNN Baseline Model using TensorFlow

Deep Learning Engineer — *Jun 21, 2021 - Aug 24, 2021*

- Developed a sophisticated Recurrent Neural Network (RNN) baseline model for sequential data processing, utilizing TensorFlow, showcasing cutting-edge expertise in neural networks and machine learning.
- Optimized model inputs through meticulous data preprocessing and feature engineering, significantly improving performance and accuracy within TensorFlow's dynamic environment.
- Experimented with various RNN architectures, including LSTM (Long Short-Term Memory) and GRU (Gated Recurrent Units), within TensorFlow to identify the most efficient structure tailored to project specifics.
- Established a comprehensive model evaluation framework using TensorFlow's tools for cross-validation and performance metrics, setting a solid baseline for ongoing enhancements.
- Advanced model excellence through rigorous hyperparameter tuning and architectural refinement in TensorFlow, ensuring optimal efficiency, scalability, and adaptability to future data challenges.
- **Client review:** *"Leveraging TensorFlow, you've not only mastered the complexity of RNNs but also significantly propelled our project forward. The baseline model you architected is a testament to your deep understanding of deep learning technologies and your capability to harness them for practical solutions. Your methodical work has laid a robust foundation for our analytics, marking a milestone in our data science journey. We're deeply grateful for your contributions and look forward to more collaborative successes."*
- **Rating: 5.00/5.00**

Text Generation with SeqGAN

ML Developer — *Jan 24, 2021 - Mar 30, 2021*

- Implemented SeqGAN using TensorFlow 2, addressing the challenge of generator differentiation by leveraging the innovative approach of sequence generation adversarial networks.
- Applied the model to the IMDB Review Dataset for training, successfully generating coherent and contextually relevant movie comments.
- Demonstrated proficiency in GANs and NLP, highlighting a deep understanding of both generative models and natural language processing techniques.
- **Client review:** *"Recep is a talented professional, serious, easy to work with. He helped me a lot to understand the technology. Recep met all the deadlines. I would hire him again for future projects."*
- **Rating: 5.00/5.00**

High-Quality Face Aging GAN

ML Developer — *Jan 9, 2021 - Jan 13, 2021*

- Focused on generating high-resolution aged faces of people using transfer learning techniques on Nvidia's StyleGAN model. Achieved remarkable results in terms of image quality and resolution, demonstrating advanced skills in GANs and machine learning.
- **Client review:** *"Recep was an amazing help. He finished the work in a fast, affordable, and effective way. On top of his professionalism, he was an absolute pleasure to work with, and I will be hiring him again."*
- **Rating: 5.00/5.00**

TensorFlow / Datasets

github.com/tensorflow/datasets

ML Developer

- Worked on the TensorFlow Datasets with TensorFlow developers during my summer and working with such good developers was a great experience for me. Assigned work tasks to me that were sometimes quite difficult allowed me to have the chance to expand my knowledge and build confidence in my abilities.

Rosemary.ai

rosemary.ai

Founder - Developer

- Developed chrome extension for bookmark searching.
- Used NLP, elastic search and deep closed domain question answering model.

pix2art

github.com/us/pix2art

Developer

- Developed a tool for artists by using specific datasets (E.g.Rose, Daisy, Tulip, etc.). The purpose of this tool is to inspire the artists from a computer vision perspective.

Deep Genius

https://us.github.io

Writer

- Blog about trending artificial intelligence project reviews in English and Turkish. Reviewed technologies, usages, and more about papers.

KnetONNX.jl

github.com/us/KnetOnnx.jl

Developer

- KnetOnnx reads an ONNX file and creates the corresponding Model in Knet that can be re-designed, re-trained, or simply used for inference. If you are planning to move your models from PyTorch or Tensorflow to Knet, or simply desiring to play with popular pre-trained neural networks: KnetOnnx provides that functionality. Open Neural Network Exchange (ONNX) is a community project created by Facebook and Microsoft. It provides a definition of an extensible computation graph model, as well as definitions of built-in operators and standard data types.

Bone Age Prediction

github.com/us/KnetOnnx.jl

Developer

- Developed predictor of skeletal age from pediatric hand x-rays. Trained with European x-rays data then pre-trained model trained with limited data collected from Turkey.

TensorFlow / Addons

github.com/tensorflow/addons

Contributor

- Added new loss functions.

English Please

github.com/us/english-please

Contributor

- Checks the trending repositories and it will automatically open an issue to the Chinese language repositories requesting for English translation.

DEC Tweet Clustering

github.com/us/dec-tweet-clustering

Contributor

- The aim of this project is to cluster the unlabelled tweets with DEC and I inspired by: ”Unsupervised Deep Embedding for Clustering Analysis”.

Cryptouch

Developer

- Distributed, decentralized, and also transparent communication is possible with blockchain technology. In this study, a communication application which is based on blockchain technology is proposed. InterPlanetary File System (IPFS) is preferred to overcome the limits of the blockchain. A prototype implementation called Cryptouch is proposed.

TanerCoin

github.com/us/tanercoin

Developer

- Developed for fun on our blockchain research group.
- Tested with 3 miners for 3 months.
- TanerCoin is a lite version of Bitcoin using scrypt as a proof-of-work algorithm.

Sudoku Solver

github.com/us/sudokusolver

Developer

- Sudoku game solver with python.