Urszula Czerwinska
SENIOR DEEP LEARNING ENGINEER

Experienced Deep Learning Engineer with a strong background in computer vision, NLP and recent training in generative AI and LLMs. Seeking to leverage my skills in designing, prototyping, and scaling AI-assisted features for innovative products.

Paris, France
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Personal website: https://urszulaczerwinska.github.io/about/
GitHub | LinkedIn | Medium Blog | Publications

Skills

Programming & Libraries: Python (TensorFlow, PyTorch, SpaCy), SQL, Elasticsearch
AI & Machine Learning: Computer Vision, NLP, Generative AI, LLMs, RAG, Diffusion Models
Frameworks & Tools: Kubeflow, LangChain, DVC, Bedrock - AWS
Languages: French, English, Polish, Spanish, Russian
Citizenship: French, Polish

Certifications & Training (2024)

- **TensorFlow Developer Certificate** (Google)
- **Generative AI with Large Language Models** (DeepLearning.AI)
- **Hugging Face Diffusion Models** (Hands-on course on diffusion models, stable diffusion)
- **Internal GenAI Training (6 weeks):** LLMs, AI agents, LangChain, Amazon Bedrock; built LLM-based RAG systems for a chatbot.
- **Emerge Her Adevinta Program:** Leadership training and coaching for women in tech.
- Attending ICLR24 and ECCV24 conference

References

Computer vision in Deep Learning is not only complex, involving unsupervised learning and complex mathematical principles, but it is also a rapidly evolving field. Urszula has always stayed ahead, ensuring the team stays on top of the latest advancements while prioritizing impactful results. Congratulations to Urszula for skillfully navigating the knowledge paradox and succeeding in this dynamic field.

Jérémy Chamoux, Engineering Manager at Adevinta

PROFESSIONAL EXPERIENCE (+5 years)

Computer Vision Deep Learning engineer for e-commerce
Senior Data Scientist, June 2022 - currently, Adevinta, Paris
Tesorflow certified March 2024

As a senior contributor in Adevinta's AI team, I led advanced deep learning computer vision and multimodal domains, that scale across multiple teams:

- **Image embedding pipelines:** Designed and deployed image embedding extraction pipelines within **Kubeflow**, enhancing AI governance and infrastructure. These pipelines serve **5 internal teams**, supporting a variety of use cases and streamlining image-related tasks across marketplaces.
- **Vision model benchmarking:** Conducted extensive benchmarking of **vision foundation models**, evaluating their performance and suitability for diverse business applications, improving overall model selection for production deployment.
- **Generative AI integration:** Enhanced existing **computer vision pipelines** by integrating **generative AI techniques** to boost image analysis capabilities, leading to improved product categorization and search relevance.
- **Diffusion model prototyping:** Led the prototyping of **diffusion models** tailored for e-commerce, unlocking new possibilities for tasks such as **image generation** and **augmentation**.
- **Custom vision models at scale:** Designed and prototyped tens of innovative computer vision models (classification, detection, segmentation) across **15+ global marketplaces**, successfully solving complex technical problems while handling over **1.5 billion monthly requests**. These models significantly enhanced accuracy (up to **+45%**) and customer satisfaction.
- **Scene-text extraction/OCR:** Revamped scene-text extraction systems, resulting in a **33% improvement** in accuracy, enabling more precise recognition of textual content within images.
- **SOTA discovery & thought leadership:** Led efforts for emerging AI topics, and authored technical blog posts to share findings internally, fostering innovation within the organization.
- **ML guild leadership:** Actively contributed to the **International Cross-teams ML Guild**, organizing reading sessions and promoting best practices in machine learning across teams, creating a culture of knowledge-sharing and continuous learning.

Senior NLP engineer at French Supreme Court (Cour de Cassation)
June 2020 – June 2022 | Paris, France

- Implemented advanced NLP techniques (**Hugging Face, PyTorch**) to improve legal document analysis.
- Developed **Named Entity Recognition (NER)** and classification models, enhancing the court's ability to extract and categorize case details.
- Deployed **T5 text generation models** for task automation, improving efficiency in document drafting and legal analysis.
- Managed end-to-end data pipelines using **DVC** and **Elasticsearch**.

Machine Learning projects tailored to the needs of our clients from CAC40
Senior Data Science Consultant, June 2019 – June 2020 | Paris, France

- **XAI for Société Générale (Banking):** Developed explainability solutions (SHAP, Alibi) to provide transparency in model predictions for financial applications.
- **NLP for Servier (Pharma) :** Led patent analysis using classification and NER models to support biotech research.

JICAP-PERFORMANCE – Lead Data Scientist
Nov. 2018 – May 2019 | Paris, France

- Designed **data extraction** solutions from PDF files, focusing on both text and image data.
- Developed the **data analytics strategy**, leading the analytics branch from inception.

Institut Curie – Junior Researcher, Ph.D.
Oct. 2015 – Nov. 2018 | Paris, France

- Led data analysis, model conception and implementation for the largest referenced oncoimmunology study using distributed computing, improving state-of-the-art results by 5%.
- **Published multiple scientific papers**, presented at **international conferences**, and won awards for outstanding research contributions.
- Taught and mentored students in bio-mathematics, programming, and machine learning at Paris Descartes University.

Education

Ph.D. in Bio-Mathematics
Institut Curie | Université Paris Descartes | Centre de Recherches Interdisciplinaire
Complementary courses: Sciences Po Paris, L'École Polytechnique