Sushil Kumar Ammanaghatta Shivakumar

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Education

Albert Ludwig University of Freiburg **Oct. 2021 – Oct. 2024**
Master of Science in Computer Science (Specialization in AI) *Freiburg, Germany*
- Thesis: *A Generative Model for Video Montage Creation*

PESIT-BSC **Aug. 2017 – June 2021**
Bachelor of Engineering in Computer Science *Bengaluru, India*

Research Interests

Large Language Models, Generative AI, Multimodal Learning, Trustworthy AI, Agentic AI , and RAG

Work/Research Experience

Max Planck Institute for Intelligent Systems **Nov 2024 – Present**
Research Intern (*Advisor: Prof. Dr. Antonio Orvieto*) *Tübingen, Germany*
- Long-Range Music Generation with focus on coherence and structure in symbolic compositions.
- Designed BPE-based MIDI tokenization pipeline for input compression and temporal consistency.
- Trained MAMBA-based architectures for autoregressive music generation with large token windows.

Zebracat AI **Feb 2024 – Oct 2024**
Master Thesis Student (*Advisor: Mohammadreza Zolfaghar*) *Freiburg, Germany*
- Developed generative framework for video montage creation by aligning video and text embeddings.
- Used GPT and UMT to reframe classification into regression-based embedding alignment.
- Achieved new benchmarks on VSPD dataset (IoU: 0.167, UMS: 1.257, SMS: 0.103).
- Validated montage-aligned video generation quality through qualitative retrieval analysis.

Fraunhofer Institute for Solar Energy Systems ISE **May 2023 – Oct 2024**
Research Assistant (*Advisor: Dr. Paul Gebhard*) *Freiburg, Germany*
- Automated scraping pipelines for scientific literature using Selenium and PyMuPDF.
- Developed parsers to extract structured metadata (tables, figures, references) from PDFs.
- Built RAG pipelines using Azure OpenAI for semantic data extraction on PV degradation.
- Implemented FAISS-based document indexing for efficient semantic retrieval.

Max Planck Institute for Security and Privacy (MPI-SP) **Apr 2022 – Mar 2023**
Research Assistant (*Advisor: Prof. Dr. Asia J. Biega*) *Bochum, Germany*
- Conducted empirical audit on deceptive GDPR patterns in top 10k Tranco-ranked websites.
- Built automation scripts to capture consent banners and identify 'Legitimate Interest' cases.
- Performed qualitative annotation using MAXQDA across screenshots and public forum discussions.

Projects

Training Noisy Real vs. Generated Images for Attribute Classification | *Nov 2023*
- Evaluated OpenCLIP performance on real-world noisy images compared to synthetic counterparts generated using Stable Diffusion.
- Created attribute-specific datasets focused on material, pattern, group, and color classification using CLIP-retrieved samples from the LAION dataset and synthetic images generated via Stable Diffusion.
- Found real noisy images offered better generalization due to inherent visual complexity.

Publications

Investigating Deceptive Design in GDPR's Legitimate Interest ***ACM CHI 2023***
- Authors: Lin Kyi, **Sushil Ammanaghatta Shivakumar**, Franziska Roesner, Cristiana Santos, Frederike Zufall, and Asia Biega.
- Stefano Rodotà Award

Turning to Online Forums for Legal Information ***Annual Privacy Forum 2025***
- Authors: Lin Kyi, Cristiana Santos, **Sushil Ammanaghatta Shivakumar**, Franziska Roesner, and Asia Biega.
- Full title: *Turning to Online Forums for Legal Information: A Case Study of GDPR's Legitimate Interests.*

AutoML Decathlon: Diverse Tasks, Modern Methods, and Efficiency at Scale ***NeurIPS 2022 CT***
- **Competition Track**

Technical Skills

Languages: Python, PyTorch, LaTeX
Developer Tools: Git, SLURM, HTCondor
Technologies / Libraries: FAISS, PyMuPDF, Selenium, MAXQDA
Relevant Coursework: Machine Learning, Deep Learning, Information Retrieval, Mobile Robotics, Robot Mapping