

# SUSHIL KUMAR AMMANAGHATTA SHIVAKUMAR

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## Education

**Albert Ludwig University of Freiburg**

**Oct. 2021 – Oct. 2024**

*Masters in Computer Science: Specialization in AI*

*Freiburg, Germany*

**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*

*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*

*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*

*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*

*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