

WORK EXPERIENCE

- May 2021 – September 2026 **Senior Research Scientist, Meta GenAI, London, United Kingdom**
Working with Andrea Vedaldi and Rakesh Ranjan on text to 3D generative models.
Previously worked on diffusion models for image generation in the Monetization GenAI org.
- August 2019 – May 2021 **Research Scientist, Samsung AI Center, Cambridge, United Kingdom**
Research on facial emotion estimation and video action recognition.
- October 2018 – March 2019 **PhD Research Intern : Samsung AI Center, Cambridge, United Kingdom**
PhD internship supervised by Maja Pantic in the Human-Centric AI group.
→ Research on deep learning methods for the analysis of facial emotions.
- October 2014 – October 2018 **Teaching assistant : Department of computing, Imperial College London**
→ **Course Support Leader** in graphics
→ Personal tutor in mathematics for first year undergraduate students

EDUCATION

- 2014 - 2019 **Imperial College London**
PhD student in measurement-based realistic computer graphics supervised by Dr Abhijeet Ghosh.
Centre for Doctoral Training in High Performance Embedded and Distributed Systems (HiPEDS).
First year MRes awarded with Distinction.
- Prizes :**
→ Second prize at the **2018 and 2016 PhD Google Poster competition** of Imperial College London
- Projects :**
→ Author of **ShaderLab Framework** an open source graphics renderer used to teach the computer graphics course at Imperial College London
→ Acquisition and rendering of diffraction effects in surface reflectance (**Best HiPEDS MRes 2015 individual project with 91%**)
- 2013 - 2014 **Imperial College London**
MSc in Advanced Computing awarded with Distinction.
- MSc Individual Project :** Image-based relighting using room lighting basis (graded 83%).
- 2011 - 2014 **Telecom ParisTech formerly known as ENST – Paris, France**
One of France's top engineering schools in the "Grandes Ecoles" system. Equivalent to a top-tier University specializing in engineering. Awarded the French Diplôme d'Ingénieur.
- Projects :**
→ Implemented *Statistics of Patch Offsets for Image Completion* by He et al. in C++
→ Implemented *Approximating Dynamic Global Illumination in Image Space* by Ritschel et al.
→ Implemented a ray tracing renderer in C++
- 2008 - 2011 **Preparatory Classes : Marcelin-Berthelot, Saint-Maur-Des-Fossés, France**
Advanced Mathematics and Physics class.
Preparation for the competitive entrance examinations to French Engineering Schools in the "Grandes Ecoles" system.

PUBLICATIONS ([GOOGLE SCHOLAR](#))

- **MeshFlow: Efficient Artistic Mesh Generation via MeshVAE and Flow-based Diffusion Transformer.** W. Li, A. Toisoul, T. Monnier, T. Shapovalov, R. Ranjan, P. Tan, A. Vedaldi. **CVPR 2026 – Highlight**
- **WorldGen: From Text to Traversable and Interactive 3D Worlds.** D. Wang, H. Jung, T. Monnier, K. Sohn, C. Zou, X. Xiang, Y. Yeh, D. Liu, Z. Huang, T. Nguyen-Phuoc, Y. Fan, S. Oprea, Z. Wang, R. Shapovalov, N. Sarafianos, T. Groueix, A. Toisoul, P. Dhar, X. Chu, M. Chen, G. Park, M. Gupta, Y. Azziz, R. Ranjan, A. Vedaldi. **CVPR 2026**
- **AssetGen: Deployable 3D Asset Generation at Interactive Speed.** D. Wang, X. Xiang, K. Sohn, T. Monnier, Y. Yeh, T. Nguyen-Phuoc, J. Zhang, Y. Fan, A. Toisoul, H. Jung, P. Dhar, M. Bunnell, N. Sarafianos, C. Zou, R. Shapovalov, A. Vedaldi, R. Ranjan. **Arxiv 2026**
- **UnCommon Objects in 3D.** X. Liu, P. Tayal, J. Wang, J. Zarzar, T. Monnier, K. Tertikas, J. Duan, A. Toisoul, J. Y. Zhang, N. Neverova, A. Vedaldi, R. Shapovalov, D. Novotny. **CVPR 2025**
- **Meta 3D Gen.** R. Bensadoun, T. Monnier, Y. Kleiman, F. Kokkinos, Y. Siddiqui, M. Kariya, O. Harosh, R. Shapovalov, B. Graham, E. Garreau, A. Karnewar, A. Cao, I. Azuri, I. Makarov, E. Le, A. Toisoul, D. Novotny, O. Gafni, N. Neverova, A. Vedaldi. **Arxiv 2024**
- **Move Anything with Layered Scene Diffusion.** J. Ren, M. Xu, J. Wu, Z. Liu, T. Xiang, A. Toisoul. **CVPR 2024**
- **Estimation of continuous valence and arousal levels from faces in naturalistic conditions.** A. Toisoul, J. Kossaifi, A. Bulat, G. Tzimiropoulos and M. Pantic. **Nature Machine Intelligence, 2021**
- **SEWA DB: A Rich Database for Audio-Visual Emotion and Sentiment Research in the Wild.** J. Kossaifi, R. Walecki, Y. Panagakis, J. Shen, M. Schmitt, F. Ringeval, J. Han, V. Pandit, K. Star, E. Hajiyev, A. Toisoul, B. Schuller, M. Pantic. **IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021**
- **Factorized Higher-Order CNNs for Spatio-Temporal Emotion Estimation.** A. Toisoul, J. Kossaifi, A. Bulat, Y. Panagakis, T. Hospedales, M. Pantic. **CVPR 2020**
- **Egocentric Action Recognition by Video Attention and Temporal Context.** J.M. Pérez-Rua, A. Toisoul, B. Martinez, V. Escorcia, L. Zhang, X. Zhu, T. Xiang. **CVPRW 2020**
- **Acquiring spatially varying appearance of printed holographic surfaces.** A. Toisoul, D. Dhillon and A. Ghosh. **SIGGRAPH Asia 2018.** Also featured in the web series **Two minute papers** and in the **Japanese media Seamless.**
- **Practical acquisition and rendering of diffraction effects in surface reflectance.** A. Toisoul and A. Ghosh. **ACM Transactions On Graphics, 2017** (Presented at **SIGGRAPH 2017**)
- **Real-time rendering of realistic surface diffraction with low rank factorization.** A. Toisoul and A. Ghosh. **CVMP 2017**

PATENTS

- **Targeted generative visual editing of images.** CY Fu, A. Brown, N. Gallagher, S. He, O. Parkhi, A. Toisoul, A. Vedaldi, T. Xiang, Y. Xie
- **Virtual Try-On Warping and Parser Based Rendering.** S. He, CY Fu, N. Gallagher, A. Toisoul, T. Xiang, Y. Xie.
- **Method and apparatus for action recognition.** B. Martinez, T. Xiang, VA Escorcia, J. Perez-Rua, Z. Xiatian, A. Toisoul

SERVICE TO ACADEMIC COMMUNITY

- Reviewer for **CVPR (2022 – 2026), ECCV 2022, ICCV 2021, SIGGRAPH (2020-2021), SIGGRAPH Asia 2020, PNAS, TPAMI** and **Image And Vision Computing** journals.

SKILLS

Computing Skills	Generative AI, Machine learning, Computer vision, Computational photography, 3D graphics Programming languages : C++, Python, GLSL Libraries and API : Pytorch, Qt, OpenCV, OpenGL
Languages	French : Native speaker English : Fluent Spanish : Intermediate

INTEREST

- Playing guitar and piano
- Swimming