

**Interests:** 3D vision, compositional generation, shape editing, part understanding, part-aware generation.

## Education

- 2023 – Today **PhD Student (3D Computer Vision)**  
**KAUST**, **VISUAL COMPUTING CENTER**, **VISION-CAIR** - MECCA, SAUDI ARABIA  
Supervisor: Pr. Mohamed H. Elhoseiny
- 2019 – 2021 **Master of Research (Data Science)**  
**GRENOBLE INP & UNIVERSITÉ GRENOBLE-ALPES** (DUAL DEGREE) - GRENOBLE, FRANCE  
**GPA:** 17.24/20. **Honors:** Summa cum laude (mention "très bien"). **Rank:** Ranked 1<sup>st</sup>.  
Main courses : ML for Comp. Vis. and Audio, Kernel methods for ML, Fundamentals of Probabilistic Data Mining, Intelligent Systems  
Awards: ANR Excellence Scholarship
- 2018 – 2021 **Master of Engineering (Applied Mathematics and Computer Science)**  
**GRENOBLE INP** - GRENOBLE, FRANCE  
Main courses: Information Theory, Language Theory, Operations Research, Probability and Statistics

## Experience

- 2021 – 2021 **Research Intern**  
**UNIVERSITÉ PARIS-SACLAY, CEA-LIST** - PARIS, FRANCE  
Supervisor: Dr. Adrian Popescu  
Continual learning methods for image classification.

## Publications

- Aymen Mir, **Habib Slim**, Faizan Farooq Khan, Jian Ding, Eslam Mohamed BAKR, Mohamed Elhoseiny – "HuMouS: Human Motion Synthesis with Fine-Grained Control using Latent Space Manipulation of Cycle-Consistent Diffusion Models" - **Under review**, 2024.
- **Habib Slim**, Mohamed Elhoseiny – "ShapeWalk: Compositional Shape Editing through Language-Guided Chains" - **CVPR**, 2024.
- Eslam Mohamed, Mohamed Ayman Mohamed, Mahmoud Ahmed, **Habib Slim**, Mohamed Elhoseiny – "CoT3DRef: Chain-of-Thoughts Data-Efficient 3D Visual Grounding" - **ICLR**, 2024.
- **Habib Slim**\*, Xiang Li, Yuchen Li, Mahmoud Ahmed, Mohamed Ayman, Ujjwal Upadhyay Ahmed Abdelreheem, Arpit Prajapati, Suhail Pothigara, Peter Wonka, Mohamed Elhoseiny – "3DCoMPaT++: An improved Large-scale 3D Vision Dataset for Compositional Recognition" - **Under review**, **TPAMI**, 2023.
- Yuchen Li\*, Ujjwal Upadhyay\*, **Habib Slim**\*, Ahmed Abdelreheem, Suhail Pothigara, Peter Wonka, Mohamed Elhoseiny – "3DCoMPaT: Composition of Materials on Parts of 3D Things" - **ECCV**, 2022. (**Oral, 2.7%**)
- **Habib Slim**\*, Eden Belouada\*, Adrian Popescu, Darian Onchis – "Dataset Knowledge Transfer for Class-Incremental Learning without Memory" - **WACV**, 2022.
- Christophe Brouard, Jean-Pierre Chevallet, Théo Orthlib, **Habib Slim** – "WIB: an integrated Wikipedia browser for participatory evaluation of relevance models" - **EGC**, 2019.

\*: Denotes equal contribution.

## Selected Projects



### Part-Aware 3D Shape Editing through Layout and Feature-Level Control

**Habib Slim**, Mahmoud Ahmed, Mohamed Elhoseiny

Developed a novel approach for part-aware 3D shape editing leveraging part-layout priors and part-level feature representations. The method enables precise shape modifications through natural language instructions and bounding box transformations while maintaining shape identity.

[Ongoing work.](#)

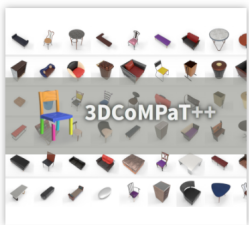


### ShapeWalk: Compositional Shape Editing through Language-Guided Chains

**Habib Slim**, Mohamed Elhoseiny

Developed ShapeWalk, a synthetic data generation method for advancing compositional shape editing guided by natural language. Generated edit chains with language prompts using shape programs, rule-based methods and language models. Applied the dataset to train latent diffusion models for language-guided 3D shape edits.

[CVPR 2024.](#)



### 3DCoMPaT<sup>++</sup>: Large-scale 3D Vision Dataset for Compositional Recognition

**Habib Slim\***, Xiang Li, Yuchen Li, Mahmoud Ahmed, Mohamed Ayman, Ujjwal Upadhyay Ahmed Abdelreheem, Arpit Prajapati, Suhail Pothigara, Peter Wonka, Mohamed Elhoseiny

Led the effort in advancing 3DCoMPaT into 3DCoMPaT<sup>++</sup>, a multimodal 2D/3D dataset with 16 million rendered views of part-instance annotations for over 10 million stylized 3D shapes. Enhanced the dataset with 41 shape categories, 275 fine-grained part categories, and 293 fine-grained material classes.

[Under review, TPAMI.](#)

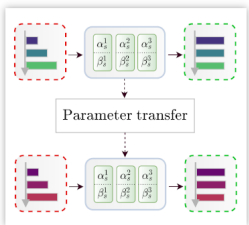


### 3DCoMPaT: Composition of Materials on Parts of 3D Things

Yuchen Li\*, Ujjwal Upadhyay\*, **Habib Slim\***, Ahmed Abdelreheem, Suhail Pothigara, Peter Wonka, Mohamed Elhoseiny

Contributed to 3DCoMPaT, a multimodal 2D/3D dataset with 16 million rendered views of stylized 3D shapes. Introduced Grounded CoMPaT Recognition (GCR) to recognize and ground compositions of materials on 3D object parts.

[ECCV 2022 - Oral.](#)



### Knowledge Transfer for Memoryless Class-Incremental Learning

[GitHub](#) [Paper](#)

Focused on class-incremental learning for computer vision, where image classes are split into multiple tasks sequentially learned by an agent. Developed a novel method using regularization and bias correction without rehearsal memory.

[WACV 2022.](#)

## Academic Services

- Co-organized the [CVPR 2024 C3DV](#), [CVPR 2023 C3DV](#) Workshops on Compositional 3D Vision.
- Co-organized the [ICCV 2023 WECIA](#) Workshop on Emotionally and Culturally Intelligent AI.
- Reviewer for CVPR (2023 - 2024 - 2025), NeurIPS (2023), ECCV (2024), SIGGRAPH-ASIA (2024), CGF-Eurographics (2024).
- Teacher Assistant for "Deep Generative Modeling" (Fall 2023), "Low-Resource Deep Learning" (Fall 2024).