# Paul Janson

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## Research Interests

My research interests center around the intersection of computer vision and computer graphics, with a particular focus on enhancing the real-world deployment of generative models for 3D content creation. My focal point lies in overcoming prevalent challenges inherent in these models, particularly the imperative need to reconcile their functionality with existing graphics pipelines.

## Education

- **Concordia University** — Montreal, Canada
  *Master of Computer Science (Thesis)* — *Sep 2023 - Present*
  - **Current GPA**: **4.3/4.3**
- **University of Moratuwa** — Moratuwa, Sri Lanka
  *Bachelor of Science in Computer Science and Engineering* — *Nov 2018 - Jun 2023*
  - **GPA**: **3.95/4.2** First Class
- **St Patrick's College** — Jaffna, Sri Lanka
  *GCE Advanced Level- Physical Science Stream* — *Aug 2017*
  - **3 Distinctions**: Pure & Applied Mathematics , Physics, Chemistry
  - **Ranked 3rd**: In National level

## Research Experience

- **Concordia University** — Montreal, Canada
  *Masters Thesis - Advisor: Dr.Eugene Belilovsky , Dr.Tiberiu Popa* — *Sep 2023 - Present*
  - **Extracting animation from Video Diffusion models**: Working on a score distillation based approach to extract animation for 3D assets from Video diffusion models.
- **University of Moratuwa** — Moratuwa, Sri Lanka
  *Undergraduate Thesis - Advisor: Dr.Thanuja Ambegoda* — *Oct 2022 - Jul 2023*
  - **Generalizing Neural fields using Meta learning**: Working on a meta learning based approach that helps to generalize neural fields to be able to reconstruct 3D object with few views. (view paper)
- **King Abdullah University of Science and Technology** — Remote
  *External Collaborator - Advisors: Dr.Mohamed Elhoseiny, Dr Rahaf Aljundi* — *Jan 2022 - Present*
  - **Continual learning with Vision Language models**: Working on a continual learning training strategy to improve the performance of vision language foundation models such as CLIP on fine-grained tasks without sacrificing their general zero-shot performance on held-out datasets (view paper)
- **King Abdullah University of Science and Technology** — Thuwal, Saudi Arabia
  *Research Intern - Advisor: Dr.Mohamed Elhoseiny* — *Jan 2022 - Dec 2022*
  - **Continual zero-shot learning with semantically guided generative random walks**: Developed a method that combines creativity-based and semantically guided random walk-based losses in continual zero-shot learning. To avoid the usage of unseen class semantic information at training time. (view paper)
  - **A simple baseline that questions the use of pre-trained models in continual learning**: Developed a simple model based on the Nearest mean classifier that shows great performance on standard continual learning benchmarks questioning the usage of continual learning on simple benchmarks. (view paper)

- **Domain Aware continual zero-shot learning**: Developed a continual zero-shot learning model with domain robustness using adversarial training. Tested its application on the classification of animals in the wild using camera trap images. (view paper)

## Publications

- **Continual zero-shot learning through semantically guided generative random walk**:
  Accepted at ICCV 2023 Conference track (view)
  Wenxuan Zhang, **Paul Janson** Divyansh Jha, Kai Yi, Ivan Skorodov, Mohamed Elhoseiny
- **Domain aware continual zero-shot learning**:
  Accepted at ICCV 2023 Workshop on Out of domain generalization in Computer Vision (view)
  Kai Yi, **Paul Janson**, Wenxuan Zhang, Mohamed Elhoseiny
- **A simple baseline that questions the use of pre-trained models in continual learning**:
  Accepted at NeurIPS 2022 Workshop on Distribution Shifts (view)
  **Paul Janson**, Wenxuan Zhang, Rahaf Aljundi, Mohamed Elhoseiny
- **Overcoming General Knowledge Loss with Selective Parameter Finetuning**:
  In review - CVPR 2024 (view)
  Wenxuan Zhang, **Paul Janson** , Rahaf Aljundi, Mohamed Elhoseiny
- **FewShotNeRF - Novel View Synthesis of Common objects with few views**:
  In review - CVPR 2024 (view)
  **Paul Janson**, Piraveen Sivakumar, Jathushan Rajasegaran , Thanuja Ambegoda

## Teaching experience

- **Concordia University** — Montreal, Canada
  *Teaching Assistant* — *Jan 2024 - Present*
  - **COMP371 Computer Graphics**:
    Lab sessions, Grading, Office hours
- **University of Moratuwa** — Moratuwa, Sri Lanka
  *Teaching Assistant* — *Aug 2022 - Jul 2023*
  - **CS3063 Theory of Computing**:
    Grading , Quiz Prep
  - **CS3613 Introduction to Artificial Intelligence** :
    Grading

## Professional Experience

- **Yarl IT Hub** — Jaffna, Sri Lanka
  *Intern* — *Feb 2018 - Oct 2018*
  - **Aki E learning platform**: Worked in content creation and website administration

## Relevant Courseworks

- **Geometric modeling and Shape Analysis**: A+
- **Computer Animation**: A+
- **Linear Algebra**: A+
- **Calculus**: A
- **Machine Learning**: A+
- **Computer Vision**: A-

## Skills and Standardized Tests

- **Programming Languages**: Python,Javascript,Java,C++
- **Libraries**: Pytorch,Scikit-learn,Pandas,Numpy,Eigen,Libigl
- **TOEFL iBT**: 106/120
- **General computing**: UNIX , SLURM

## Scholarships and Awards

- **Concordia Merit Scholarship**: 2023
- **ICCV Travel Award by DEI Chairs**: 2023
- **GPU Award for undergraduate thesis proposal by ML collective**: 2022
- **Appeared in Dean's honors list for 7 semesters** : 2018-2022
- **Mahapola Merit Scholarship for Undergraduate education**: 2018-2022
- **Bank of Ceylon Nanajaya Scholarship for Undergraduate education** : 2018-2022
- **POH Scholarship by Zagro Asia Limited, Singapore for Undergraduate education** : 2018-2022
- **Dialog Merit Scholarship for Undergraduate education** : 2018-2022
- **Governors Award for best performance in GCE AL (3rd in the country)** : 2017

## Volunteering and Professional service

- **Reviewer for Conference** : CVPR 2023 , CVPR 2024 , ECCV 2024
- **Reviewer for Workshop**: Closing The Loop Between Vision And Language ICCV 2023
- **Reviewer for Journal** : Computer Vision and Image Understanding 2023
- **Reviewer for Workshop**: Neural Fields across Fields ICLR 2023
- **Student representative for CSE department**: 2019-2020
- **Volunteer at Yarl IT hub non profit organization**: 2018-2022