

# OSAMA MAKANSI

PHD CANDIDATE



## CONTACT



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[lmb-personal-website](#)



[github](#)



Bugginger Str. 2, 79114,  
Freiburg, Germany

## EDUCATION

### Computer Science (PhD)

University of Freiburg, Germany  
4th year since 05/2018

### Computer Science (M.Sc.)

University of Freiburg, Germany  
2015-2018

GPA 1.0/1.0 (with honor)

### Informatics Engineering (B.Sc.)

University of Aleppo, Syria  
2007-2012

GPA 86.5/100 (Excellent)

## RESEARCH AREAS

Multi-modal future prediction.

Learning on imbalanced datasets.

Causality and Explainable AI.

## SKILLS

### RESEARCH

Computer vision  (Advanced)

Machine learning  (Advanced)

Causality  (Proficient)

## PROFILE

I have strong experience in deep learning with main interest in robustness, uncertainty estimation, and probabilistic multi-modal prediction. I also received several academic and social awards.

## EXPERIENCE

### APPLIED SCIENTIST INTERN

#### Amazon AWS | Germany | 2021

- Analyzed features attribution and causality in the task of trajectory prediction.

### RESEARCH SCIENTIST

#### University of Freiburg | Germany | 2018 - Present

- Developed a novel multi-modal probabilistic approach for future prediction.
- Introduced the new task of emergence prediction for objects to ensure better safety in autonomous driving.
- Developed an efficient technique to address long-tail distribution of real datasets.
- Supervised several student projects/these.

### RESEARCH ASSISTANT

#### University of Freiburg | Germany | 2016 - 2018





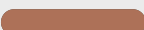

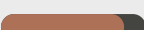

- Developed a new optical flow method on real images.
- Integrated optical flow and video super-resolution.

### RESEARCH SCIENTIST

#### IdScan Biometrics Ltd | Turkey | 2013 - 2015

- Worked on developing a robust document clustering.
- Researched an efficient UV-light authentication system.
- Managed the computer vision research team.

## SOFTWARE

Python		(Expert)
C++		(Advanced)
CUDA		(Proficient)
Pytorch		(Expert)
Tensorflow		(Expert)
Caffe		(Proficient)
AWS		(Advanced)
Linux & Windows		(Expert)

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## TUTORING

- Computer vision
  - Image processing
  - Seminar in computer vision
  - Bio-medical data analysis seminar
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## REVIEWING

- NeurIPS 2019.
  - ICRA 2020, 2021.
  - CVPR 2020, 2021, 2022.
  - ICCV 2021.
  - ECCV 2020.
  - WACV 2021.
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## PUBLICATIONS

- **O. Makansi**, J. von Kügelgen, F. Locatello, P. Gehler, D. Janzing, T. Brox, B. Schölkopf: You Mostly Walk Alone: Analyzing Feature Attribution in Trajectory Prediction. In **ICLR 2022**.
- **O. Makansi**, Ö. Çiçek, Y. Marrakchi, T. Brox: On exposing the challenging long tail in future prediction of traffic actors. In **ICCV 2021**.
- **O. Makansi**, Ö. Çiçek, K. Buchicchio, T. Brox: Multimodal future localization and emergence prediction for objects in egocentric view with a reachability prior. In **CVPR 2020**.
- **O. Makansi**, E. Ilg, Ö. Çiçek, T. Brox: Overcoming limitations of mixture density networks: A sampling and fitting framework for multimodal future prediction. In **CVPR 2019** ([patent](#))
- E. Ilg, Ö. Çiçek, S. Galesso, A. Klein, **O. Makansi**, F. Hutter, T. Brox: Uncertainty estimates and multi-hypotheses networks for optical flow. In **ECCV 2018**.
- **O. Makansi**, E. Ilg, T. Brox: End-to-end learning of video super-resolution with motion compensation. In **GCPR 2017 (Oral)**.

For more publications see: [google scholar](#)

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## AWARDS / SCHOLARSHIPS

### VDI Award | Association of German Engineers | 2019

For my master thesis "Augmented FlowNet with real-world training data".

### DAAD Award | German Academic Exchange Service | 2018

For my outstanding academic performance and my intercultural involvement with the fire fighters.

### Alumni Freiburg Award | University of Freiburg | 2018

For my contribution to the development of fire safety education program for refugees.

### DAAD Leadership Scholarship | German Academic Exchange Service | 2015

For outstanding Syrian students to pursue academic studies in Germany.

### AI-Basel Award | University of Aleppo | 2008-2012

For my remarkable academic performance in which I was ranked among the top 3.

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## SUPERVISION

- Investigating a hybrid neural network for video frame prediction and optical flow estimation: J. Heipel (**Bachelor Thesis**).
- Addressing long tailed distributions in multimodal future prediction: S. Ayadi and D. Hssan (**Master Project**).