

Dagstuhl Seminar on Time-of-Flight Imaging: Algorithms, Sensors and Applications

Room: Saarbrücken

	Monday - 22.10.	Tuesday - 23.10.	Wednesday - 24.10.	Thursday - 25.10.	Friday - 26.10.
7:30-8:45	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
9:00-10:30	Session I: Welcome and opening, Introduction of participants	Session V: Talks 2 (3 talks)	Session IX: Talks 3 (3 talks)	Session XI: Talks 5 (3 talks)	Session XV: Talks 8 (3 talks)
10:30-11:00	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00-12:15	Session II: Introductory Tutorial - ToF Imaging	Session VI: Demos	Session X: Talks 4 (2-3 talks)	Session XII: Talks 6 (2-3 talks)	Session XVI - Closing, Wrap-up
12:15-14:00	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break
14:00-15:30	Session III: Talks 1 (3 talks)	Free-time	Excursion	Session XIII: Talks 7 (3 talks)	End of seminar - departure
15:30-16:00	Coffee Break	Coffee Break		Coffee Break	
16:00-17:45	Session IV: Alternative Session	Session VIII: Alternative Session		Session XIV: Alternative Session	
18:00-19:30	Dinner	Dinner		Dinner	
19:30 -- open end	Socializing	Socializing	Socializing	Socializing	

Programme

Monday, October 22

9:00-10:30 Session I – Opening

- Organizers
Introductory Remarks about the seminar and introduction of participants

11:00-12:15 Session II – Introductory tutorial

- Giora Yahav/Shahram Izadi
Introductory Tutorial about time-of-flight cameras and how to use their data

14:00-15:30 Session III – Talks: Modified/crazy sensor setups

Chair: Martin Eisemann

- Seungkyu Lee
Multiple IR signals in ToF Imaging
- Diego Gutierrez/Christopher Barsi
Capturing and Visualizing Light in Motion
- Ramesh Raskar
Looking Around Corners

16:00-17:45 Session IV- Alternative session

- James Davis
Non-standard usage of ToF hardware – Brainstorming
(see separate detailed description)

Tuesday, October 23

9:00-10:30 Session V – Talks: High-level ToF imaging I: perspectives for ToF imaging in vision, graphics, medical imaging

Chair: Cornelia Lanz

- Juergen Gall
Will Depth Cameras Have a Long-term Impact on Computer Vision Research?
- Martin Eisemann
Difficulties and novel applications in a low-cost multi-view depth camera setting
- Reinhard Klein
Robust Object Detection and Pose Estimation by combining 2D and 3D shape primitives

11:00-12:15: Session VI: Demos

Details of demos announced later

14:00-15:30: Session VII: Free time

Free discussions, socializing

16:00-17:45 Session VIII- Alternative session

Seunghyeon Lee

Time-of-flight Cameras vs. Kinect

(see separate detailed description)

Wednesday, October 24

9:00-10:30 Session IX - Talks: Reconstructing the static and dynamic world in 3D

Chair: Thomas Helten

- Andreas Jordt
Efficient Deformation Reconstruction from Depth and Color Images using Analysis by Synthesis
- Ruigang Yang
High Quality Modeling and Motion Analysis from a Single Depth Camera
- Erhardt Barth
Gesture-based interaction with ToF cameras

11:00-12:15 Session X - Talks: High-level ToF imaging II: Perspectives for ToF imaging in vision, graphics, medical imaging

Chair: Andreas Jordt

- Alexander Seitel
Time-of-Flight cameras for computer-assisted interventions: opportunities and challenges
- Slobodan Ilic
Deformable Object Detection in Underwater ToF Videos
- Shahram Izadi
Depth Sensing Cameras: Technologies, Techniques and Applications

14:00-18:00 Excursion

Plans announced at the seminar

Thursday, October 25

9:00-10:30 Session XI - Talks: New imaging paradigms and alternative sensor setups

Chair: Damien Lefloch

- Gordon Wetzstein/Christopher Barsi
Frequency Analysis of Transient Light Transport with Applications in Bare Sensor Imaging
- Aditi Majumder
Can ToF Cameras Enable Large Dynamic Interactive Spatial Augmented Reality (SAR) Systems?
- Ivo Ihrke
Can we reconstruct the shape of a mirror-room from multi-bounce ToF measurements ?

11:00-12:15 Session XII - Talks: Interpreting depth

Chair: Oisín Mac Aodha

- Thomas Helten
Open questions in full-body motion estimation with depth cameras
- Cornelia Lanz
Automated classification of therapeutical face exercises using the Kinect
- P.J. Narayanan
Handling all the Depth Measurements

14:00-15:30 Session XIII - Talks: Hardware – Design, calibration, and characterization

Chair: Gordon Wetzstein

- Rahul Nair
TOF Ground Truth Generation
- Michael Balda
Benchmarking Time-of-Flight Data for Specific Application Demands
- Adrian Dorrington
Mitigating common distortion sources, and exploring alternative applications for Time-of-Flight cameras

16:00-17:45 Session XIV - Alternative session

Shohei Nobuhara -

*How ToF cameras can change 3D video production in the real world
(see separate detailed description)*

Friday, October 26

9:00-10:30 Session XV – Talks : Low-level ToF processing

Chair: Kwang In Kim

- Oisín Mac Aodha
Single Depth Image Super-Resolution
- Frank Lenzen
Enhancing ToF data measurements: current work, evaluation with ground truth and open problems
- Andreas Kolb
Real Time Handling of Depth Data

11:00-12:15 Session XVI – Closing Session

- Organizers
Summary and Concluding Remarks