

---

## - Bachelor Project and Thesis - Pose-Invariant 2D Ear Recognition

---

### **CASED**

In CASED (Center for Advanced Security Research Darmstadt) Technische Universität Darmstadt, Fraunhofer Institute for Secure Information Technology and the University of Applied Sciences Darmstadt collaborate in the fast developing field of IT Security. In a unique cooperation, which combines different areas of expertise from these renowned institutions, progressive IT security solutions are researched, developed and implemented into industrial economy: CASED brings together computer scientists, engineers, physicists, legal experts and business economists. Read more on [www.cased.de](http://www.cased.de).

### **Motivation & Goal**

The outer ear is an emerging biometric modality, which has gained increasing attention in the last ten years. Using the ear as a biometric modality has some advantages compared to the face, such as the absence to facial expressions or ageing.

During your bachelor project you will first evaluate different approaches for ear recognition with respect to robustness to pose variations. In the next step you will implement either one of the existing approaches or your own approach in MATLAB. In the bachelor thesis you will conduct systematic Experiments for measuring different aspects of your approach and comparing it to other approaches. You can also evaluate the behavior of your implementation with different image datasets.

### **Tasks**

- Investigation of existing approaches to 2D ear recognition
- Implement and test your own approach

### **Requirements**

- Motivation and creativity
- Good Programming skills (preferably in MATLAB)
- Interest in image processing, biometrics and computer vision

### **Contact**

If you are interested, please contact Anika Pflug

Room: 4.3.08  
CASED - Center for Advanced Security Research Darmstadt  
Mornewegstraße 32  
64293 Darmstadt

E-Mail: [anika.pflug@cased.de](mailto:anika.pflug@cased.de)

Phone: +49 6151 16 75182