CHRISTIAN S. PILZ

Neuenhofer Weg 11, 52074 Aachen/ Germany,
born at the Lake of Konstanz/ Germany, 5th may 1976,
cpi@partofthestars.com, +49 176 67701471

**Principal research engineer with extensive knowledge in
computer vision, machine learning and human state computing**

KEY ACCOMPLISHMENTS

Executive thought leadership and high-level strategic research and engineering

- Technology restructuring of a driver state monitoring system with facial alignment, pose and gaze prediction. OEM&Tier1 deployment with embedded serial production. Marketvolume of 15 Mio. Units.

- Technology restructuring of a German voice biometric company, fusion with a CRIM/ Montreal spin-off with a transfervolume of 25 Mio. EUR, 11 patents, 2 product awards.

- AffectiveMind: Author and group lead of a research project funded by the EU European Regional Development Fund (EFRE) with 2.5 Mio. EUR.

- Video-based Vigilance Detection: Author and consortium lead of a research project funded by the German Federal Ministry of Research (BMBF) with 1.5 Mio. EUR.

EXPERIENCE

CanControls GmbH (RWTH LTI spin-off), Aachen/ Germany. Head of research and development. 2011-present

- Responsible for strategic research and technical lead management, team leadership for clients in automotive, health and aerospace sector

- Research and algorithmic development of camera based behavioral and physiological feature extraction from human face

- Technical lead management of public founded research projects

BSI LLC. (Gregg Steinhauser Investment), Greenwhich/ CT (USA). Interim position chief scientific officer (CSO). 2009-2010

- Technical restructutring of a mobile mutlimodal biometric identification system

- IP-managment

VoiceTrust AG (Marcel Boekhoorn – Ramphastos Investments), Munich. Head of research and development. 2006-2010

- Technology restructuring of voice recognition algorithm
- Common criteria certification of the voice biometric system
- IP-management

PATENTS & PUBLICATIONS

Patents

- US 2010/0131279 Method and Arrangement For Controlling User Access, 2010
- EP 2192576 Voice Authentication with Means to Prevent Playback Attacks, 2010
- WO2008/110441 Digital Method for Authenticating a Person, 2009
- EP2137724 Digital Method and for Authenticating a Person, 2009
- WO 2008/095827 Phonemic Suitability, 2007
- DE 102007005704 Phonemic Suitability, 2007
- US 2007/027663 Mean Error Vector Quantization, 2007
- US 2007/0233483 Speaker Authentication in Digital Communication Networks, 2007
- DE 102007011831 Speaker Authentication in Digital Communication Networks, 2007
- EP 1860647 Mean Error Vector Quantization, 2007
- EP 1843325 Speaker Authentication in Digital Communication Networks, 2007

Publications

- Predicting Brainwaves from Face Videos. The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, Seattle 2020
- On The Vector Space in Photoplethysmography Imaging. The IEEE International Conference on Computer Vision (ICCV) Workshops, Seoul/ South Korea 2019
- Local Group Invariance for Heart Rate Estimation from Face Videos in the Wild. The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, Salt Lake City 2018
- On the Diffusion Process for Heart Rate Estimation from Face Videos under Realistic Conditions. Pattern Recognition: 39th German Conference, GCPR 2017, Basel, Switzerland. Proceedings (Lecture Notes in Computer Science), Springer 2017
- Heart Rate from Face Videos under Realistic Conditions for Advanced Driver Monitoring. De Gruyter, Berlin 2017
- Videobasierte Herzratenschätzung aus Gesichtsregionen unter realistischen Bedingungen. DGLRM Congress, Köln 2017
- Facial Features in Predicting Vigilance. DLRM Congress, Bückeburg 2016

- Video-Based Vigilance Detection, BMBF Congress, Hannover 2016
- iPhone- Gestenerkennung, Touchscreen und der Beschleunigungssensor. IHK - Competence Center Day, Hochschule München 2008
- Kullback-Leibler Divergence for Replay Attack Recognition in Text-Dependent Speaker Verification. Technical Report, VoiceTrust AG 2008
- SUVI, Sprachdatenbank für die Text-Unabhängige Sprechererkennung, Fachtagung für elektronische Sprachsignalverarbeitung, Cottbus 2007
- Phonemic Suitability in Text-Dependent Speaker Recognition, Technical Report, VoiceTrust AG 2007

Awards

- Wireless Broadband Innovation Awards Finalist: iPhone VOICESAFE, 2009
- Voice Days Plus, Best Innovation Award, VOICSAFE mobile-server, 2009

EDUCATION

RWTH   Aachen
Ph.D. studies in: Computer Vision, Pattern Recognition & Human State Computing
- Thesis: The Face of Vigilance

Hochschule München   München
M.Sc. (with honours) in: Computer Sciences, Biometrics, Pattern Recognition
- Thesis: Generative & Discriminative Text-Independent Speaker Verification Incorporating Session & Channel Compensation

TH Mittelhessen   Friedberg-Giessen
Dipl. Ing. in: Media& Computer Sciences, Biometrics, Speech-& Signal-Processing
- Thesis: Speech Codec Identification for Cross-Channel Effects in Speaker Recognition

SKILLS

SCRUM, Common Criteria (CC), MISRA, C/C++

LANGUAGES

German (mother language), English (fluent), French (basic understanding)

REFERENCES

Volkswagen, Audi, BMW, Ford, Toyota, Renault, Peugeot, DS Automobiles (PSA).
Continental, Bosch, Valeo, Faurecia. Diehl Aerospace, NLR - Netherlands Aerospace, German Aerospace Society. CES Las Vegas.

PRIVATE INTERESTS

Natur&Surfing, Classic Mustangs& V8 engines architecture