



Andreas Karge M.Sc.

Curriculum Vitae

Personal Details

Nationality:	German	Address:	Kastellweg 9 D-72072 Tübingen
Date of Birth:	05-05-1971	Mobil:	+49 - 173 - 2 84 95 14
Place of Birth:	Halle/Saale, Germany		
Marital Status:	Unmarried, two children	e-mail:	andreas.karge@gmx.de

Profile

Interdisciplinary skills in software engineering, image processing, color management and optics

Production: 17 years of experience in design, development and testing in agile and scrum oriented software projects with more than 15 millions lines of code

Research: Spectral response measurements of lighting and camera systems, spectral data based camera color calibration methods, polarization aspects in image formation

Teaching: Presentations and lecture in image processing, company trainer in dual studies courses

Professional Experience

since 2022	Chromasens GmbH, Konstanz Senior Software-Engineer/Software Architect (permanent)
	Machine Vision: GenICam standard based camera controlling components, image reconstruction and defect detection algorithms
	Using C, C++ for core components; cmake, google test unit test framework; Qt for GUI
2005-2022 (paused 17/18)	GMG GmbH & Co KG Tübingen Senior Software-Engineer (permanent)
	Color image processing: architecture, design, implementation and test for applications components on Microsoft Windows and Mac OS, algorithm design and implementation for color profile creation and application
	Responsible for cooperative degree program in computer science (DHBW)
	Using C++ and COM for image processing components, C for spectral and color measurement devices integration, cmake, mstest and google test unit test frameworks; Microsoft-SQL for database access layer; Qt and C# .net for GUI

- 2020-2022 University of Applied Science Cologne, Advanced Media Institute
Visiting Lecturer (teaching assignment)
- Computer Vision: image based computer graphics, master course media informatics;
camera image formation models, scene reconstruction methods;
2D/3D image processing algorithms
- 2013-2015 Media University Stuttgart, Institute of Applied Sciences,
Academic Research Assistant (permanent)
- Research project in color management for professional cine and tv camera systems;
measuring spectral response of camera systems and spectral power distribution of cine
lighting; development of client/server based camera color profile calculation, design and
construction of spectroscopic components
- Using MATLAB, PHP
- 2002-2004 Engineer (free-lance)
- Consulting and training for digital photography
- Image processing application for detecting correlations in image pairs using PowerPC
AltiVec and Carbon libraries for MacOSX
- Cross platform lens distortion removal application using Qt library
- 1997-2002 Nikon GmbH Düsseldorf, Consultant (contract)
- Consulting, training and technical support in applied digital photography
- 1997-1998 Renault Institute of Quality and Management, Cologne, Software-Developer (permanent)
- Quality assurance software development for car repair services using VisualBasic
- 1991-1993 Own desktop publishing studio in layout, type setting, graphical arts and photography
- 1990-1991 Cultural Journal „Halle anderS.“ Halle, Photographer
and Graphical Artist, Chief Editor in Photography (permanent)
- 1990 Leipzig-Concert, advertising agency Leipzig, Photographer (permanent)
- 1989-1990 Photographic Studio Halle-Neustadt, Dienstleistungskombinat Halle,
Photographer (permanent)

Publications and Presentations

- 2018 Karge, A./Rieger, I./Eberhardt, B./Schilling, A.: Using Chromaticity Error Minimisation for Fast Camera Spectral Responsivity Measurement. Proceedings of the 26th Color and Imaging Conference. Vancouver, Canada
- 2016 Karge, A. : Open Film Tools – a Free Toolset for a Spectral Data Based Movie Camera Color Characterization, 22nd Workshop Color Image Processing, Ilmenau, Germany
- 2016 Karge, A./Fröhlich, J./Eberhardt, B. : Open Film Tools – Spectral Based Color Correction Tools for Cinematographers. Stuttgart, Germany
- 2015 Karge, A./Fröhlich, J./Eberhardt, B.: A Spectral Database of Commonly Used Cine Lighting. Proceedings of the 23rd Color and Imaging Conference. Darmstadt, Germany
- 2015 Eberhardt, B./Fröhlich, J./Grandinetti, S./Karge, A.: The Future of Filmmaking: High Dynamic Range(HDR), Wide Color Gamut(WCG) and Calibrated Color Acquisition. FMX, Stuttgart, Germany

Further Training

2011	Qt basic and optional Training – e-GITS GmbH
2010	5 th European Conference on Color in Graphics, Imaging and Vision; 12 th International Symposium on Multispectral Color Science – Society for Image Science and Technology
2007	Object Oriented Testing – oose Informative Informatik GmbH
2006	Tornado Camp .NET Workshop – newtelligence AG
2006	OOP Design Patterns – oose Informative Informatik GmbH

Skills and Knowledge in Software Engineering

Methods:	Scrum based agile software development, OOD using UML, unit testing, continuous integration
Architecture:	Databased client-server applications, multithreading, cross platform development
Programming:	C++, C, C#, Python, Matlab
Frameworks:	Ceres, numpy, Eigen, OpenCL, OpenGL, .net, ATL, STL, Qt, OpenCV
Technology:	.net, COM, XML, Microsoft-SQL
Tools:	cmake, qmake, VisualStudio, QtCreator, Xcode, MSTest and GoogleTest, Git, GitLab, TeamFoundationServer, Altova Umodel, MATLAB, Mathematica, MS Office, OpenOffice
Operating Systems:	Windows, MacOS X, Linux

Languages

native:	German
foreign::	Fluently speaking and writing English, knowledge in Russian, basic knowledge in Spanish

Education

since 2016	University of Tübingen, Wilhelm-Schickard-Institute of Computer Science, Visual Computing PhD Researcher Characterisation of RGB polarisation sensors under different spectral and polarisation illumination conditions Monochromator and spectroscope based camera spectral response measurements Nonlinear optimization methods for spectral data based color correction, ICC and ACES-IDT profile applications for machine vision, cine/TV and photographic camera systems Using C++ (Ceres, Eigen), MATLAB (image processing and optimization toolbox), OpenCV, OpenCL, OpenGL, Qt, QtCreator, Python (NumPy, SciPy)
2002-2005	Master courses in media informatics at the University of Applied Sciences Cologne, Dpt. of Computer Science Degree: M.Sc. Media Informatics

Thesis theme: „Design and Implementation of a Color Management Application for a LED-based Rear Projection Television System“

Main courses: digital audio, image and video signal processing, data visualizing, design and implementation of interactive medias and graphical user interfaces, project management

- 1993-2001 Study of imaging sciences and media technology at the University of Applied Sciences Cologne, Dpt. of Imaging Sciences and Media Technology
- Degree: Diplom-Ingenieur (FH) Imaging Sciences and Media Technology
Thesis theme: „Active Triangulation Method for Occupant Sensing in Vehicles“
- Main courses: geometrical and wave optics, color metrology, digital image processing
Additional lectures: C, C++, technical English, construction and design of optical systems
- 1991-1992 Study of physics at Martin-Luther-University Halle-Wittenberg
- 1989-1991 Evening classes at Volkshochschule Halle-Neustadt
Degree: General qualification for university entrance
- 1987-1989 Apprenticeship and certificate as a photographer at the photographic studio Halle-Neustadt, Dienstleistungskombinat Halle
- 1977-1987 22./28. Polytechnical school Halle-Neustadt

Internships

- 2004-2005 Carl Zeiss Jena GmbH, research center, life sciences and projection
Development of colorimetric measurement applications
- 2000-2001 Visteon Deutschland GmbH, technology center Cologne
Evaluation of optical and illumination components in an active triangulation system

Leisure Activities

Cross platform panorama image application for spherical mirror imaging devices using Qt, C++, OpenGL and WebGL/HTML5

Photographic studio and collaboration at Tübingen Society of Artists, photographic workshops and exhibitions

05-05-2023, Tübingen



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