James Pritts

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Research Interests

My research focuses on modeling repeated content in images with an emphasis on minimal solvers for single-view geometry and robust multi-model estimation.

Education

Czech Technical University, Prague, Czechia — 2020
PhD candidate, Computer Science
Thesis: "Methods for the Rectification of Imaged Coplanar Repeated Patterns"

Czech Technical University, Prague, Czechia — 2013
MSc, Computer Science, with honors

The University of North Texas, Denton, TX — 2002
BSc, Mathematics

Experience

Facebook Reality Labs, AR/VR, Pittsburgh PA — 2019 – Present
Post-Doctoral Research Scientist
Develop novel and robust auto-calibration algorithms for virtual-reality headsets and multi-camera data-capture rigs.

BAE Systems, Advanced Information Technologies, Burlington, MA — 2003 – 2008
Lead Research Engineer
Responsible for the planning, management, and development of new capabilities for computer vision research efforts. Led teams of researchers, software engineers, and system engineers to develop and deploy working systems that advanced the state-of-the-art in computer vision. Managed relations with government customers and contractors by serving as the point of contact. Conducted many successful demos and program reviews and authored technical reports. Key contributor on winning proposals. Responsible for the design and implementation of novel computer vision algorithms.

NASA, Johnson Space Center, Houston, TX — 1999 – 2000
Researcher
Developed new body tracking technology for the purpose of remotely controlling the robotic arm of the International Space Station.

Publications

Y. Lochman, O. Dobosevych, R. Hryniv, **J. Pritts**. Minimal Solvers for Single-View Auto-Calibration. Accepted for oral presentation in WACV, 2021

J. Pritts, Z. Kukelova, V. Larsson, Y. Lochman, O. Chum. Minimal Solvers for Rectifying from Radially-Distorted Conjugate Translations. In PAMI, 2020

J. Pritts, Z. Kukelova, V. Larsson, Y. Lochman, O. Chum. Minimal Solvers for Rectifying from Radially-Distorted Scales and Change of Scales. In IJCV, 2020

J. Pritts, Z. Kukelova, V. Larsson, O. Chum. Rectification from radially-distorted scales. In ACCV, 2018

J. Pritts, Z. Kukelova, V. Larsson, O. Chum. Radially-distorted conjugate translations. In CVPR, 2018

J. Pritts, D. Rozumnyi, M. P. Kumar, O. Chum. Coplanar repeats by energy minimization. In BMVC, 2016

J. Pritts, O. Chum, J. Matas. Detection, rectification and segmentation of coplanar repeated patterns. In CVPR, 2014

J. Pritts, O. Chum, J. Matas. Approximate models for fast and accurate epipolar geometry estimation. In IVCNZ, 2013

Awards

Asian Conference on Computer Vision (ACCV) 2018 Saburo Tsuji Best Paper Award 2018

Image and Vision Computing New Zealand (IVCVNZ) 2013 Best Paper Award 2013

Dean's Prize for Outstanding Master's Thesis, CTU in Prague 2013

Academic Activities

Reviewer for ECCV, 3DV

Programming Skills

Python, MATLAB, C++, SQL

Invited Talks

Opportunities and Risks of Artificial Intelligence 03/2018
The Aspen Institute's 2018 Young Leader's Program, Tále, Slovakia

Radially Distorted Conjugate Translations 12/2017
Ukrainian Catholic University Data Science Colloquium, Lviv, Ukraine

Detection, Rectification, and Segmentation of Coplanar Repeated Patterns 07/2017
The Eastern European Computer Vision Conference, Odessa, Ukraine

Visual Recognition in the Wild: Image Retrieval, Faces, and Text 07/2016
The Eastern European Computer Vision Conference, Odessa, Ukraine

Detection, Rectification and Segmentation of Coplanar Repeated Patterns 04/2014
The 34th Pattern Recognition and Computer Vision Colloquium, Prague, Czechia

Teaching

Image Retrieval Course 01/2017
Machine Learning Winter School at Ukrainian Catholic University, Lviv, Ukraine

Pattern Recognition and Machine Learning, course notes 2013 – 2016
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