

# Curriculum Vitae – Pavol Klacansky

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**Discipline:** Computer Science

**Research interests:** computational topology, virtual reality, compilers (static analysis, optimizations, and backends), and operating systems.

## Education

- 2015 – present, **Computer Science PhD**, University of Utah, GPA: 3.95.
  - Thesis: Topological queries and data structures for scalable topological data analysis.
  - Advisor: Valerio Pascucci.
- 2014, **Artificial Intelligence BSc**, University of Leeds, GPA: 3.81.
  - Final year project: Parallel contour tree computation and visualization.
  - Advisor: Hamish Carr.

## Work Experience

- 2015 – present, **Graduate Research Assistant**, Scientific Computing and Imaging Institute, University of Utah.
  - Conduct research on scientific tools in virtual reality and scalable topological data analysis.
  - Advisor: Valerio Pascucci.
- 2018, **Graduate Intern**, Computation, Lawrence Livermore National Laboratory.
  - Project: Design and development of a VR metrology tool.
  - Mentor: Peer-Timo Bremer.
- 2017, **Graduate Intern**, Computation, Lawrence Livermore National Laboratory.
  - Project: A research of resolution-precision trade-off on data analysis tasks.
  - Mentor: Peer-Timo Bremer.
- 2016, **Graduate Intern**, Computation, Lawrence Livermore National Laboratory.
  - Project: Progressive merge tree algorithm and extension of merge tree to AMR.
  - Mentor: Peer-Timo Bremer.
- 2014 – 2015, **Research Assistant**, School of Computing, University of Leeds.
  - Project: An evaluation of an application of Joint Contour Net to vector fields and development of accurate fiber surfacing algorithm for tetrahedral meshes.
  - Mentor: Hamish Carr.
- 2014, **Intern**, School of Earth and Environment, University of Leeds.
  - Project: Construction of a visualization pipeline in VisIt for Earth's magnetic core.
  - Mentor: David Gubbins.
- 2013, **Intern**, School of Computing, University of Leeds.

- Project: Design and implementation of library for remote control of a buggy for a summer school and Raspberry Pi-based robot avoiding obstacles.
- Mentor: Andy Bulpitt.

## Community Service

- Open Scientific Visualization Datasets, <http://klacansky.com/open-scivis-datasets/>.
- Reviews for TVCG, IEEE VIS, and EuroVis.

## Journal Publications

- Efficient and flexible hierarchical data layouts for a unified encoding of scalar field precision and resolution. D. Hoang, B. Summa, H. Bhatia, P. Lindstrom, P. Klacansky, W. Usher, P.-T. Bremer, and V. Pascucci. TVCG 2021.
- Toward localized topological data structures: Querying the forest for the tree. P. Klacansky, A. Gyulassy, P.-T. Bremer, and V. Pascucci. TVCG 2020. Best paper honorable mention at IEEE VIS 2019.
- A study of the trade-off between reducing precision and reducing resolution for data analysis and visualization. D. Hoang, P. Klacansky, H. Bhatia, P.-T. Bremer, P. Lindstrom, and V. Pascucci. TVCG 2019.
- A virtual reality visualization tool for neuron tracing. W. Usher, P. Klacansky (first authors), F. Federer, P.-T. Bremer, A. Knoll, J. Yarch, A. Angelucci, and V. Pascucci. TVCG 2018.
- Fast and exact fiber surfaces for tetrahedral meshes. P. Klacansky, J. Tierny, H. Carr, and Z. Geng. TVCG 2017.

## Conference Publications

- Distributed merge forest: A new fast and scalable approach for topological analysis at scale. X. Huang, P. Klacansky, S. Petruzza, A. Gyulassy, P.-T. Bremer, and V. Pascucci. ICS 2021.
- Tracking features in embedded surfaces: Understanding extinction in turbulent combustion. W. Widanagamaachchi, P. Klacansky, H. Kolla, A. Bhagatwala, J. Chen, V. Pascucci, and P.-T. Bremer. LDAV 2015.

## Workshop Publications

- An overview of the Topology ToolKit. M. Falk, G. Favelier, C. Gueunet, P. Guillou, A. Kamakshidasan, P. Klacansky, J. Levine, J. Lukasczyk, D. Sakurai, M. Soler, J. Tierny, W. Usher, J. Vidal, M. Wozniak. TopoInVis 2019.

## Presentations

- Toward localized topological data structures: Querying the forest for the tree. IEEE VIS 2019.
- Fast and exact fiber surfaces for tetrahedral meshes. IEEE VIS 2017.