ÁGOSTON SIPOS

Software Engineer, Computer Scientist

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agostonsipos

9 Budapest, Hungary Solution State 0000-0002-5562-2849

EXPERIENCE

Software Engineer

Formlabs

🛗 September 2022 – Ongoing

9 Budapest

Developing a desktop 3D printer slicing application

Research assistant

Dept. of Control Engineering and Informatics, **Budapest University of Technology and Economics**

🛗 September 2018 – August 2022 **9** Budapest

- Taking part in a research group for geometric modeling
- Teaching introductory programming for undergraduates
- Supervising students

Graduate teaching assistant

Dept. of Algorithms and their Applications, **Eötvös Loránd University**

🛗 September 2016 – January 2020 **9** Budapest

- Teaching computer graphics lab (also in English)
- Developing additional material for education

Software development intern **Morgan Stanley**

🛗 June 2015 – August 2016

Budapest

Developing financial mathematical software in C++

EDUCATION

PhD in Informatics (thesis submitted) **Budapest University of Technology and Economics**

🛗 Sept 2018 – Ongoing

9 Budapest

Thesis title: Implicit surface patches in 3D geometric modeling

MSc in Computer Science (w. Honours) **Eötvös Loránd University**

🛗 Sept 2016 – June 2018

9 Budapest

 Specialization in Mathematical Modelling, Signal Processing, Computer Graphics

BSc in Computer Science (w. Honours)

Eötvös Loránd University

🛗 Sept 2013 – June 2016

Budapest



LANGUAGES

English	
German	

RESEARCH INTERESTS

Continuous surface representations Differential geometry, surface analysis 3D surface modeling systems Computer graphics and visualization

EXTRACURRICULARS

Member of Bolyai College (Eötvös L University)

- Student board member (1 year)
- Website administrator

Orienteering

Volunteer experience in competitions

HOBBIES

- Board games
- 💻 Reading history
- **රා**ර් Cycling

OTHER PROJECTS

Isosurfacing: Marching Cubes and Dual Contouring in Octrees

Google Summer of Code 2022

🛗 May 2022 – August 2022

Implementing isosurface extraction based on adaptively sampled data in an octree in the CGAL library

Modeling general topology free-form surfaces in 3D OTKA-124727

🛗 April 2018 – November 2021

Working with the following research topics:

- Triangle mesh processing
- Control-point based multi-sided surfaces
- Implicit surfaces

Autonomous Vehicle Control Technologies EFOP-3.6.3-VEKOP-16-2017-00001

September 2017 – February 2018

Working with 3D sensing and stereo reconstruction

• Investigating radial distortion handling with regards to point-correspondence-based relative pose estimation

SELECTED PUBLICATIONS

Journal Articles

- Sipos, Ágoston. "Corner-Based Implicit Patches". In: Acta Cybernetica (2023). DOI: 10.14232/actacyb.299598.
- Sipos, Ágoston et al. "Approximating triangular meshes by implicit, multi-sided surfaces". In: *Computer-Aided Design* and *Applications* 19.5 (2022), pp. 1015–1028. DOI: 10.14733/cadaps.2022.1015–1028.
- Vaitkus, Márton et al. "Multi-sided B-spline surfaces over curved, multi-connected domains". In: Computer Aided Geometric Design 89 (2021), p. 102019. DOI: 10.1016/j.cagd.2021.102019.
- Sipos, Ágoston et al. "Multi-sided implicit surfacing with I-patches". In: *Computers & Graphics* 90 (2020), pp. 29–42. DOI: 10.1016/j.cag.2020.05.009.
- Várady, Tamás et al. "Multi-sided Bézier surfaces over curved, multi-connected domains". In: *Computer Aided Geometric Design* 78 (2020). 101828. DOI: 10.1016/j.cagd.2020.101828.

Conference Proceedings

- Sipos, Ágoston. "Corner-based implicit surfaces". In: Proceedings of the 13th Conference of PhD Students in Computer Science. 2022, pp. 12–16.
- Sipos, Ágoston et al. "Implicit representations for multi-sided surface patches". In: Proceedings of the Tenth Hungarian Conference on Computer Graphics and Geometry. 2022, pp. 1–8.
- Sipos, Ágoston. "A generalization of tangent-based implicit curves". In: Proceedings of the Workshop on the Advances of Information Technology. 2022, pp. 79–82.
- Sipos, Ágoston et al. "Creating good quality meshes from smooth implicit surfaces". In: Proceedings of the Workshop on the Advances of Information Technology. 2021, pp. 47–51.
- Sipos, Ágoston. "A *G*ⁿ rational spline with an algebraic distance field". In: Proceedings of the Workshop on the Advances of Information Technology. 2020, pp. 112–116.
- Hajder, Levente et al. "Edge Detection by Plane Fitting". In: Proceedings of the IX. Hungarian Conference on Computer Graphics and Geometry. 2018, pp. 182–186.

For a more complete list of my conference, workshop and seminar talks, please refer to my website.