

# Lucia Tódová

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[🌐 todoval.github.io/blog/](https://todoval.github.io/blog/)



## Employment History

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|---------------------|--|
| Oct 2025 – present  | ■ <b>Postdoctoral Researcher</b> , <i>Charles University</i> , Prague, Czech Republic<br>Research work, thesis supervision, teaching   |
| Oct 2021 – Sep 2025 | ■ <b>Research Assistant</b> , <i>Charles University</i> , Prague, Czech Republic<br>Research work, thesis supervision, teaching        |
| Nov 2022 – May 2023 | ■ <b>Intern</b> , <i>Weta Digital</i> , Wellington, New Zealand<br>Light transport research on Weta's offline spectral renderer Manuka |
| Feb 2019 – Apr 2020 | ■ <b>R&amp;S Developer</b> , <i>Broadcom</i> , Prague, Czech Republic<br>HLASM LSP Plugin in C++, HLASM and JavaScript                 |
| Jul 2018 – Oct 2018 | ■ <b>Intern</b> , <i>CA Technologies</i> , Prague, Czech Republic<br>HLASM LSP Plugin in C++, HLASM and JavaScript                     |
| Jul 2017 – Sep 2017 | ■ <b>Intern</b> , <i>Normex s.r.o.</i> , Nitra, Slovakia<br>User interface for a PDF validator in Java<br>Validation rules             |

## Education

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|-------------|---|
| 2021 – 2025 | ■ <b>Ph.D. Degree</b> , <i>Charles University</i> , Prague, Czech Republic<br>Study programme: <i>Visual Computing and Computer Games</i><br>Thesis title: <i>Advances in Spectral Uplifting and Reconstruction</i><br>Focus on light transport, spectral rendering, color science.<br>A member of the Computer Graphics Group. |
| 2019 – 2021 | ■ <b>Master's Degree</b> , <i>Charles University</i> , Prague, Czech Republic<br>Study programme: <i>Computer Graphics and Game Development</i><br>Thesis title: <i>Constrained Spectral Uplifting</i>  |
| 2016 – 2019 | ■ <b>Bachelor's Degree</b> , <i>Charles University</i> , Prague, Czech Republic<br>Study programme: <i>Programming and Software Systems</i>   |

## Research Publications

### Journal Articles

- 1 L. Tódová and A. Wilkie, "Constrained spectral uplifting for hdr environment maps," *Computer Graphics Forum*, Jan. 2025. DOI: [10.1111/cgf.15280](https://doi.org/10.1111/cgf.15280).
- 2 L. Tódová, A. Wilkie, and L. Fascione, "Wide gamut moment-based constrained spectral uplifting," *Computer Graphics Forum*, vol. 41, Jul. 2022. DOI: [10.1111/cgf.14617](https://doi.org/10.1111/cgf.14617).

### Conference Proceedings

- 1 L. Tódová and A. Wilkie, "Constrained Spectral Uplifting for HDR Environment Maps," in *Eurographics Symposium on Rendering*, E. Haines and E. Garces, Eds., The Eurographics Association, 2024, ISBN: 978-3-03868-262-2. DOI: [10.2312/sr.20241153](https://doi.org/10.2312/sr.20241153).
- 2 L. Tódová, A. Wilkie, and L. Fascione, "Moment-based constrained spectral uplifting," in *Eurographics Symposium on Rendering - DL-only Track*, The Eurographics Association; 2021, pp. 215–224, ISBN: 978-3-03868-157-1. DOI: [10.2312/sr.20211304](https://doi.org/10.2312/sr.20211304).

## Skills

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|-----------|---|
| Main      | ■ Proficiency in light transport, spectral rendering & color science<br>Spectral uplifting<br>Image-based lighting (IBLs), BRDFs<br>Volume rendering, subsurface scattering |
| Coding    | ■ C++, Python, C#, Java ...   |
| Languages | ■ English ( <i>Advanced, FCE Certificate, A</i> ), Czech ( <i>Advanced</i> ),<br>Slovak ( <i>Native</i> ), Spanish ( <i>Beginner</i> )                                      |
| Misc.     | ■ Academic research, teaching<br>Git, CMake, L <sup>A</sup> T <sub>E</sub> X<br>Unity, Mitsuba renderer, OpenGL   |

## Miscellaneous Experience

### Events

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|------|---|
| 2024 | ■ <b>PDF Week, Charles University, Prague</b><br>Main organizer of PDF Association's <i>PDF Week</i> conference at Charles University in Prague<br>Close collaboration with the PDF Association |
| 2022 | ■ <b>Eurographics Symposium on Rendering, Charles University, Prague</b><br>Co-organization of EGSR 2022 along hosted by the Computer Graphics Group  |

### Teaching

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|------|--|
| 2024 | ■ <b>Introduction to Computer Graphics, Charles University, Prague</b><br>Introduction CG class for students of the Bachelor's program   |
| 2021 | ■ <b>Computer Graphics III (<i>Physically-based Rendering</i>), Charles University, Prague</b><br>Advanced Computer Graphics class for students of the Master's program<br>Covering basics of light transport, BRDFs, volume rendering, etc. |

### Projects

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|---------------|---|
| GitHub        | ■ <a href="https://github.com/todoval">https://github.com/todoval</a>   |
| Clouds Shader | ■ <a href="https://github.com/todoval/CloudsShader">https://github.com/todoval/CloudsShader</a>                                   |
| VR Game       | ■ <a href="https://desx-studios.itch.io/the-elementalist-vr">https://desx-studios.itch.io/the-elementalist-vr</a>                 |
| HLASM Plugin  | ■ <a href="https://github.com/eclipse-che4z/che-che4z-lsp-for-hlasm">https://github.com/eclipse-che4z/che-che4z-lsp-for-hlasm</a> |