

# Alexander Youcis

## Curriculum Vitae

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📄 <https://alex-youcis.github.io/>

### Positions held

- 2025-present **Postdoctoral fellow**, *University of Toronto*.
- 2023–2025 **Postdoctoral fellow**, *National University of Singapore*.
- 2021–2023 **JSPS Fellow**, *University of Tokyo*.
- 2019–2021 **Postdoc**, *Institute of Mathematics of the Polish Academy of Sciences*.

### Education

- 2013–2019 **PhD**, *University of California, Berkeley (advised by Sug Woo Shin)*.
- 2011–2013 **Bachelor's degree**, *University of Maryland, College Park*.

### Research interests

Arithmetic geometry, representation theory, and local/global methods used in the Langlands program. In particular: Shimura varieties, moduli spaces of local Shutkas,  $p$ -adic Hodge theory,  $p$ -adic geometry,  $p$ -adic representation theory and endoscopic methods.

### Published papers

- N. Imai, H. Kato, and A. Youcis. *A Tannakian Framework for Prismatic  $F$ -crystals*. To appear in **Forum of Mathematics, Sigma** <https://arxiv.org/abs/2406.08259>
- P. Achinger and A. Youcis. *Beauville–Laszlo Gluing of Algebraic Spaces*. **Journal of the Institute of Mathematics of Jussieu (2025)**. DOI: 10.1017/S1474748025101539
- P. Daniels and A. Youcis. *Canonical Integral Models of Shimura Varieties of Abelian Type*. **Forum of Mathematics, Sigma (2025)**. DOI: 10.1017/fms.2025.27
- K. Česnavičius, and A. Youcis. *The analytic topology suffices for the  $B_{\text{dR}}^+$ -Grassmannian*. To appear in  **$p$ -adic Hodge Theory (2022 Simons Symposium)**. <https://arxiv.org/abs/2303.11710>
- P. Achinger, M. Lara and A. Youcis. *Variants of the de Jong fundamental group* (To appear in **American Journal of Mathematics**). <https://arxiv.org/abs/2203.11750>.
- A. Bertoloni Meli, N. Imai and A. Youcis. *The Jacobson–Morozov Morphism for Langlands Parameters in the Relative Setting*. **International Mathematics Research Notices (2023)**, DOI: <https://doi.org/10.1093/imrn/rnad217>
- A. Bertoloni Meli and A. Youcis. *An approach to the characterization of the local Langlands correspondence*. **Represent. Theory** **27 (2023)**, 415–430.

P. Achinger, M. Lara, and A. Youcis. *Geometric arcs and fundamental groups of rigid spaces*. **J. Reine Angew. Math.** **799** (2023), 57–107. MR4595307

P. Achinger, M. Lara, and A. Youcis. *Specialization for the pro-étale fundamental group*. **Compos. Math.** **158** (2022), no. 8, 1713–1745. MR4490930

E. Beazley, M. Nichols, M. Park, X. Shi, and A. Youcis. *Bijjective projections on parabolic quotients of affine Weyl groups*, **Journal of Algebraic Combinatorics** (2014), DOI: 10.1007/s10801-014-0559-9

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## Preprints

K. Madapusi and A. Youcis. *On canonicity for integral models of Shimura varieties with hyperspecial level*. <https://arxiv.org/abs/2604.06442>

Abhinandan and A. Youcis. *An integral comparison of crystalline and de Rham cohomology*. <https://arxiv.org/abs/2507.17631>

N. Imai, H. Kato, and A. Youcis. *An integral analogue of Fontaine’s crystalline functor*. <https://arxiv.org/abs/2504.16282>

N. Imai, H. Kato, and A. Youcis. *The Prismatic Realization Functor for Shimura Varieties of Abelian Type*. <https://arxiv.org/abs/2310.08472>

A. Bertoloni Meli and A. Youcis, *The Scholze-Shin conjecture for Unramified Unitary Groups I: The No Endoscopy Case*, <https://alex-youcis.github.io/ScholzeShinIMPAN.pdf>

Youcis, Alexander Frank *The Langlands-Kottwitz Method and Deformation Spaces of  $p$ -Divisible Groups of Abelian Type*. Thesis (Ph.D.)—University of California, Berkeley. 2019. 192 pp. ISBN: 978-1085-79410-7, ProQuest LLC

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## Awards and fellowships

- 2022 Long term JSPS fellowship
- 2021 Short term JSPS fellowship
- 2018 Berkeley RTG Grant Fellowship
- 2017 Berkeley RTG Grant Fellowship

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## Conferences co-organized

- March 2026 New  $p$ -adic perspectives on canonical integral models for Shimura varieties (held at the American Institute of Mathematics)
- March 2026 AMS Special Session on Shimura Varieties and Arithmetic (held at the 2026 Spring Eastern Sectional of the AMS)

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## Professional activities

- 2014-2017 Co-founded and administered the Berkeley Directed Reading Program (a program to pair undergraduate and graduate students for independent study)

- 2014-2017 Mentor in the Berkeley Directed Reading Program
- 2020-Present Refereeing and quick opinions (JAMS, Forum of Mathematics Pi, Duke Mathematics Journal, International Mathematics Research Notices, Mathematische Annalen, Compositio Mathematica, Algebra and Number Theory)

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## Selected talks

- 2026 UChicago Number Theory Seminar | University of Chicago | *Syntomic Integral Canonical Models of Shimura varieties*
- 2026 NW Number Theory Seminar | Northwestern University | *Syntomic Integral Canonical Models of Shimura varieties*
- 2026 UMN Number Theory Seminar | University of Minnesota | *Syntomic Integral Canonical Models of Shimura varieties*
- 2026 BU Number Theory Seminar | Boston University | *Syntomic Integral Canonical Models of Shimura varieties*
- 2026 Workshop on Recent Developments in Hodge Theory and O-minimality | IAS | *Some recent advances on the  $p$ -adic geometry of Shimura varieties*
- 2025 Special lecture series | Morningside Center of Mathematics | Lecture series (4 talks): *Some recent advances on the  $p$ -adic geometry of Shimura varieties*
- 2025 Pitt Number Theory Seminar | University of Pittsburgh | Lecture series (2 talks): *Introduction to prismatic cohomology and applications to classical questions*
- 2024 Haruzo Hida 70th Birthday Conference | TIFR | *Serre–Tate theory for Shimura varieties of abelian type*
- 2024 MSU Number Theory Seminar | Michigan State University | *Serre–Tate theory for Shimura varieties of abelian type*
- 2024 Pitt Number Theory Seminar | University of Pittsburgh | *Serre–Tate theory for Shimura varieties of abelian type*
- 2024 Tokyo Institute of Technology Number Theory Seminar | Tokyo Institute of Technology | *Serre–Tate theory for Shimura varieties of abelian type*
- 2024 Tohoku University Number Theory Seminar | Tohoku University | *Serre–Tate theory for Shimura varieties of abelian type*
- 2024 Oberseminar Arithmetische Geometrie und Darstellungstheorie | Max Planck Institute | *Some recent advances on the  $p$ -adic Hodge theory of integral models of Shimura varieties*
- 2024 Boston College Number Theory Seminar | *Some recent advances on the  $p$ -adic Hodge theory of integral models of Shimura varieties*
- 2023 Conference on Arithmetic and Cohomology of Algebraic Varieties, Hanoi | *A prismatic characterization of integral canonical models of Shimura varieties of abelian type*
- 2023 University of Maryland, Lie Groups and Representation Theory Seminar | *A prismatic realization functor for Shimura varieties of abelian type*

- 2022 University of Michigan | *A prismatic realization functor for Shimura varieties of abelian type*
- 2022 POSTECH | *A prismatic realization functor for Shimura varieties of abelian type*
- 2021 University of Tokyo number theory seminar | *Geometric coverings of rigid spaces*
- 2021 University of Alberta arithmetic geometry seminar | *Geometric coverings of rigid spaces*
- 2021 RAMPAGE seminar | *Geometric coverings of rigid spaces*
- 2020 CARTOON conference | *An approach to characterizing the local Langlands correspondence over  $p$ -adic fields*
- 2019 University of Cambridge | *The Scholze–Shin conjecture for unramified unitary groups*
- 2019 University of Warsaw | *The Scholze–Shin conjecture for unramified unitary groups*
- 2018 University of Maryland | *The Langlands–Kottwitz–Scholze method for Shimura varieties of abelian type*
- 2018 University of Minnesota | *The Langlands–Kottwitz–Scholze method for Shimura varieties of abelian type*
- 2018 Stanford University | *The Langlands–Kottwitz–Scholze method for Shimura varieties of abelian type*
- 2018 University of Tokyo | *The Langlands–Kottwitz–Scholze method for Shimura varieties of abelian type*

## Teaching Experience

- Fall 2025 Instructor for introduction to proofs (Math 138), University of Toronto
- Summer 2018 Instructor of record for number theory (Math 115), University of California, Berkeley
- Summer 2017 Instructor of record for number theory (Math 115), University of California, Berkeley
- 2013–2019 Graduate Student Instructor, University of California, Berkeley