

Alexander Youcis

Curriculum Vitae

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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 **Postdoctoral fellow**, *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 shtukas, p -adic Hodge theory, p -adic geometry, p -adic representation theory, and endoscopic methods.

Published and accepted papers

- Abhinandan and A. Youcis. *An integral comparison of crystalline and de Rham cohomology*. To appear in **Selecta Mathematica (New Series)**. arXiv:2507.17631.
- N. Imai, H. Kato, and A. Youcis. *A Tannakian framework for prismatic F -crystals*. **Forum of Mathematics, Sigma** **14** (2026), e100, 64 pp. DOI: 10.1017/fms.2026.10228.
- P. Achinger and A. Youcis. *Beauville–Laszlo gluing of algebraic spaces*. **Journal of the Institute of Mathematics of Jussieu** **25** (2026), no. 2, 1193–1235. DOI: 10.1017/S1474748025101539.
- P. Daniels and A. Youcis. *Canonical integral models for Shimura varieties of abelian type*. **Forum of Mathematics, Sigma** **13** (2025), e69. DOI: 10.1017/fms.2025.27.
- K. Česnavičius and A. Youcis. *The analytic topology suffices for the B_{dR}^+ -Grassmannian*. To appear in **p -adic Hodge Theory (2022 Simons Symposium)**. arXiv:2303.11710.
- P. Achinger, M. Lara, and A. Youcis. *Variants of the de Jong fundamental group*. **American Journal of Mathematics** **147** (2025), no. 5, 1433–1456. DOI: 10.1353/ajm.2025.a971095.

A. Bertoloni Meli, N. Imai, and A. Youcis. *The Jacobson–Morozov morphism for Langlands parameters in the relative setting*. **International Mathematics Research Notices** (2024), no. 6, 5100–5165. DOI: 10.1093/imrn/rnad217.

A. Bertoloni Meli and A. Youcis. *An approach to the characterization of the local Langlands correspondence*. **Representation Theory** 27 (2023), 415–430. DOI: 10.1090/ert/643.

P. Achinger, M. Lara, and A. Youcis. *Geometric arcs and fundamental groups of rigid spaces*. **Journal für die reine und angewandte Mathematik** 799 (2023), 57–107. DOI: 10.1515/crelle-2023-0013. MR4595307.

P. Achinger, M. Lara, and A. Youcis. *Specialization for the pro-étale fundamental group*. **Compositio Mathematica** 158 (2022), no. 8, 1713–1745. DOI: 10.1112/S0010437X2200759X. MR4490930.

E. Beazley, M. Nichols, M. Park, X. Shi, and A. Youcis. *Bijective projections on parabolic quotients of affine Weyl groups*. **Journal of Algebraic Combinatorics** 41 (2015), no. 4, 911–948. DOI: 10.1007/s10801-014-0559-9.

Preprints

K. Madapusi and A. Youcis. *On canonicity for integral models of Shimura varieties with hyperspecial level*. arXiv:2604.06442.

N. Imai, H. Kato, and A. Youcis. *An integral analogue of Fontaine’s crystalline functor*. arXiv:2504.16282.

N. Imai, H. Kato, and A. Youcis. *The prismatic realization functor for Shimura varieties of abelian type*. arXiv:2310.08472.

A. Bertoloni Meli and A. Youcis. *The Scholze–Shin conjecture for unramified unitary groups I: The no endoscopy case*. PDF.

Doctoral thesis

2019 A. F. Youcis. *The Langlands–Kottwitz method and deformation spaces of p -divisible groups of abelian type*. PhD thesis, University of California, Berkeley. 192 pp. ProQuest LLC. ISBN: 978-1085-79410-7.

Awards and fellowships

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

Conferences co-organized

- March 2026 New p -adic perspectives on canonical integral models for Shimura varieties (American Institute of Mathematics, Pasadena, March 2–6).
- March 2026 AMS Special Session on Shimura Varieties and Arithmetic (2026 Spring Eastern Sectional Meeting, Boston College, March 28–29).

Professional activities

- 2025–2026 Organizer, University of Toronto Number Theory Seminar.
- 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 Mathematical Journal; International Mathematics Research Notices; Mathematische Annalen; Compositio Mathematica; Algebra & Number Theory)

Selected talks

- 2026 UChicago Number Theory Seminar | University of Chicago | *Syntomic integral canonical models of Shimura varieties*
- 2026 Number Theory Seminar | Northwestern University | *A syntomic perspective on integral canonical models*
- 2026 Arithmetic and Representation Theory Seminar | University of Minnesota | *A syntomic perspective on integral canonical models*
- 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 | Institute for Advanced Study | *A syntomic perspective on integral canonical models*
- 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 2026 Instructor for Linear Algebra II (MAT224), University of Toronto
- Fall 2025 Instructor for Introduction to Proofs (MAT138), 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