Anna Kay

MSTP Student · Computer Science and Engineering

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My research focuses on computer vision and its applications to healthcare. Current projects include topics in hierarchical clustering, detecting landmarks on hip radiographs, and improving 2D and 3D cell segmentation. As an undergraduate, I worked in cell biology on renal aquaporin trafficking, and earlier in medical school, I studied racial disparities in pediatric emergencies.

Education

University of Michigan *2021 - present*

Medical Scientist Training Program *GPA 4.0/4.0*

- PhD department: Computer Science and Engineering
- Advisor: Prof. Stella Yu

Massachusetts Institute of Technology *2016 - 2021*

Physics (8), Chemistry and Biology (5-7) *GPA 5.0/5.0*

- Minors: economics, computer science

Publications

** equal contribution*

Under Review

K. Miller, K. Reddy, **A. Kay**, M. Nguyen, R. Issa, L. Juratli, M. Johnson Griggs, M. Yacim, A. Elam, A. Sugar, S. Mian, A. Kaplan. Michigan Ophthalmology Pipeline: Five Years of Aiming to Increase Diversity in Ophthalmology. Journal of Academic Ophthalmology.

Undergraduate

M. L. Antony, D. Chang, K. Noble-Orcutt, **A. Kay**, J. L. Jensen, H. Mohei, C. Myers, K. Sachs, Z. Sachs. CD69 marks a sub-population of acute myeloid leukemia with enhanced colony forming capacity and a unique signaling activation state, Leukemia & Lymphoma (2023), https://doi.org/10.1080/10428194.2023.2207698

P. Cheung*, M. Boukenna*, R. Babicz, S. Mitra, **A. Kay**, T. Paunescu, N. Baylor, L. Chen-Chung, A. Nair, R. Bouley, D. Brown. Intracellular sites of AQP2 S256 phosphorylation identified using inhibitors of the AQP2 recycling itinerary, American Journal of Physiology-Renal Physiology (2023), https://doi.org/10.1152/ajprenal.00123.2022

C. Chiou, M. Wang; E. Taniguchi, R. Nascimento e Silva, **A. Khoroshilov**, D. Li, H. Wang, S. Greenstein, S. Brauner, A. Turalba, L. Pasquale, L. Shen. Characterization of Prelaminar Wedge-Shaped Defects in Primary Open Angle Glaucoma, Current Eye Research (2020), https://doi.org/10.1080/02713683.2020.1836229

Presentations

** equal contribution | speakers underlined*

Select External

M. Nguyen*, **A. Kay***, K. Miller, Y. Paulus. The impact of race on pediatric eye-related injuries in school and daycare. American Academy of Ophthalmology. (Poster theater, 2023)

V.A. Kulkarni, C. Yeh, J. Krogue, **A. Kay**, M. Firtha, P. Donohue, M. Villalba, S. Jeon, S.X. Yu. Deep-Learning Quantification of Hip Displacement in Children with Cerebral Palsy: Validation on International Radiographic Set from 24 Centers. American Academy for Cerebral Palsy and Developmental Medicine Annual Meeting. (Podium, 2023)

A. Kay*, M. Nguyen*. Pediatric emergency room visits for eye-related injuries in school and daycare: trends from 2003-2022. Women in Ophthalmology. (Poster, 2023)

M. Nguyen, K. Miller, **A. Kay**, M. Johnson-Griggs, S. Mian, A. Kaplan. Medical Student Barriers to the Pursuit of a Career in Ophthalmology. Rabb-Venable. (Poster, 2023)

A. Kay, M. Nguyen. Transfer learning with VGG16 deep convolutional neural network model effectively differentiates between subtypes of bright and dark lesions. The Association for Research in Vision and Ophthalmology. (Poster, 2023)

Select Internal

C. Yeh, **A. Kay**, S. Jeon, P. Donahue, M. Villalba, J. Krogue, S.X. Yu, V.A. Kulkarni. Automated measurement of migration percentage in hip surveillance radiographs. e-Health and Artificial Intelligence symposium. (Poster, 2023)

Select Undergraduate

A. Khoroshilov, C. Paunescu, S. Cheung, A. Nair, R. Bouley, D. Brown. Phosphorylated forms of AQP2 are re-distributed onto intracellular vesicles after colchicine mediated microtubule disruption in renal epithelial cells. KUH Summer Undergraduate Research Conference. (Poster, 2019)

A. Khoroshilov, M.L. Antony, K. Noble-Orcutt, K. Sachs, Z. Sachs. Effect of Mebendazole Dependent Myb Inhibition in NRAS Mutant AML. Molecular Biology of the Cell, 29 (26), 3063 (abstract P1316). https://doi.org/10.1091/mbc.E18-10-0647. (Student poster competition, 2018)

Outreach & Professional Development

Mentorship

2023-curr. **Explore CS Research Team**, research mentor to undergraduate junior
2023-curr. **UM-INSPIRE**, mentor to undergraduate sophomore
2021-2022 **Doctors of Tomorrow Foundations**, capstone leader for grades 9-10

Service

2023-curr. **MSTP Justice Diversity Accessibility Equity task force**, member
2023-curr. **Diversity in Medicine Conference**, organizer
2023 **UM CSE internal reviewer**, for Computer Vision and Pattern Recognition
2022 **Medical Educational Consulting Group Student Impact Symposium**, organizer
2021-2022 **Admissions SLounge**, coordinator
2021-2022 **Galens**, financial allocations committee, Tag Days volunteer

Leadership

2021-curr. **Medical French**, vice-president
2022-curr. **Michigan Journal of Medicine**, editor
2023 **Clinical Assessment Task Force**, student representative
2022-2023 **Michigan Ophthalmology Pipeline** , co-president
2021-2022 **American Medical Women's Association**, president
2021-2022 **Wolverine Street Medicine**, education coordinator
2021-2022 **Medical Education Consulting Group**, team leader

Teaching (select undergraduate)

Fall 2018 **8.02 Seminar XL**, instructor
2018-2019 **Physics TSR^2**, teaching assistant
Fall 2019 **8.012**, office hours lead

Languages

Russian (native)
French (near native/fluent)
Spanish (DELE C1)