

254th WPI-IIS Seminar

Special Student Seminar

All-optical circuit dissection with two-photon calcium imaging and holographic optogenetics

Two-photon holographic optogenetics enables targeted manipulation of functionally identified neuronal ensembles in behaving animals. Building on this approach, pioneering works have combined it with two-photon calcium imaging to perturb the activity of functionally defined neuronal populations — probing their causal role in animal behaviors of interest and mapping local functional connectivity from photostimulation-evoked calcium responses. In this talk, I will present the recent advancements in optics and neuroscience that underlie this technique, along with the calibration procedures developed in our lab for precise alignment of the photostimulation and imaging systems.



Mr. Sumiya Kuroda

Ph.D. Candidate

University College London

Date: **Friday, June 5, 2026**

Time: **16:30 – 17:30**

Venue: **1F Auditorium, IIS Building**

*** On-site participation only**



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