Stanford

Alexander Ioannidis

Assistant Professor (Research) of Genetics and of Biomedical Data Science

Institute for Computational and Mathematical Engineering (ICME)

Bio

BIO

Dr. Ioannidis earned his Ph.D. from Stanford University in Computational and Mathematical Engineering together with an M.S. in Management Science and Engineering (Optimization).

ACADEMIC APPOINTMENTS

- Assistant Professor-Research, Genetics
- Assistant Professor-Research, Department of Biomedical Data Science
- Adjunct Professor, Institute for Computational and Mathematical Engineering (ICME)

PROFESSIONAL EDUCATION

- Ph.D., Stanford , Computational and Mathematical Engineering
- M.S., Stanford , Management Science and Engineering
- M.Phil, University of Cambridge , Computational Biology
- B.A., summa cum laude, Harvard , Chemistry and Physics

Publications

PUBLICATIONS

- **Message in a bottleneck: Nested founder effects from French Polynesia to Rapa Nui and Hawai'i.** *Science (New York, N.Y.)*
  Shanks, C., Huang, E. C., Thomassin, C., Emde, A. K., Rodière, V., Moraga, M., Sandoval, K., Merriman, T., Pascart, T., Moreno-Estrada, A., Castel, S. E., Fox, K., Ioannidis, et al
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- **Present-day Admixed Genomes Reveal Prehistoric Adaptation to Cold, Maritime Diet, and Local Pathogens in Patagonia.** *Genome biology and evolution*
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- **ARGformer: learning on ancestral recombination graphs with transformers.** *Bioinformatics (Oxford, England)*
  Bonet, D., Shanks, C., Cara, M. C., Abante, J., Ioannidis, A. G.
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- **Scalable high resolution ancestry deconvolution for genomic data.** *Nature communications*
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- **HPRC2: A human pangenome reference with near-complete coverage of common genetic variation.** *bioRxiv : the preprint server for biology*
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- **Non-Parametric Ancestry Adjustment for Polygenic Scores.** *medRxiv : the preprint server for health sciences*
  Montserrat, D. M., Barrabés, M., Bustamante, C. D., Ioannidis, A. G.
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- **The landscape of genomic and socioeconomic variables in colorectal cancer patients based on genetic ancestry.** *Cancer epidemiology, biomarkers & prevention : a publication of the American Association for Cancer Research, cosponsored by the American Society of Preventive Oncology*
  Srinivasan, P., Bristow, S. L., Mendez, F. L., Krinshpun, S., Jurdi, A., Liu, M. C., Rabinowitz, M., Wall, J., Bustamante, C. D., Ioannidis, A. G., De La Vega, F. M., Mitchell, B. L., Aleshin, et al
  2026

- **Signatures of pathogen-driven selection and Austronesian gene flow of Papua New Guinea HLA alleles.** *American journal of human genetics*
  Font-Porterias, N., Nemat-Gorgani, N., Kichula, K. M., Al-Hindi, D. R., Harrison, G. F., Tao, S., Zhu, F., Montero-Martin, G., Fernández-Viña, M. A., Guethlein, L. A., Parham, P., Oppenheimer, S. J., Ioannidis, et al
  2026

- **Pan-African model explains Homo sapiens genetic and morphological evolution.** *bioRxiv : the preprint server for biology*
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- **Session Introduction: AI and Machine Learning in Clinical Medicine Bridging or Separating Model Intelligence and Human Expertise.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Haredasht, F. N., Romano, J. D., Beaulieu-Jones, B. K., Kim, D., Ioannidis, A., Tison, G. H., Daneshjou, R., Chen, J. H.
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- **Clinical genetic variation across Hispanic populations in the Mexican Biobank.** *Nature medicine*
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- **iLTM: Integrated Large Tabular Model**
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- **Advances in Biomedical Missing Data Imputation: A Survey** *IEEE ACCESS*
  Barrabes, M., Perera, M., Novelle Moriano, V., Giro-I-Nieto, X., Mas Montserrat, D., Ioannidis, A. G.
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- **Feature Shift Localization Network**
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- **Overcoming health disparities in precision medicine**
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- **PopGenAdapt: Semi-Supervised Domain Adaptation for Genotype-to-Phenotype Prediction in Underrepresented Populations.** *bioRxiv : the preprint server for biology*
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- **Global Biobank Meta-analysis Initiative: Powering genetic discovery across human disease.** *Cell genomics*
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- **SALAI-Net: species-agnostic local ancestry inference network.** *Bioinformatics (Oxford, England)*
  Oriol Sabat, B., Mas Montserrat, D., Giro-I-Nieto, X., Ioannidis, A. G.
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- **Validating and automating learning of cardiometabolic polygenic risk scores from direct-to-consumer genetic and phenotypic data: implications for scaling precision health research.** *Human genomics*
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- **Deconvoluting complex correlates of COVID-19 severity with a multi-omic pandemic tracking strategy.** *Nature communications*
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- **Generative Moment Matching Networks for Genotype Simulation.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
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- **The genetic legacy of the Manila galleon trade in Mexico.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*
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- **High Resolution Ancestry Deconvolution for Next Generation Genomic Data** *bioRxiv*
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- **LAI-NET: LOCAL-ANCESTRY INFERENCE WITH NEURAL NETWORKS**
  Montserrat, D., Bustamante, C., Ioannidis, A., IEEE

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