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ICB PhD public presentations

MACHINE LEARNING AND HYBRID MODELING: TOOLS FOR BIOPHARMACEUTICAL DEVELOPMENT AND PRODUCTION

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Project Summary: Biologics are a rapidly growing, versatile class of therapeutics which are constituted by proteins and peptides, gene and cell therapies, vaccines, to state a few. They have received increased attention in the past two decades as a treatment alternative for cancer, autoimmune diseases, and many others. While the entire development cycle of a typical biologic takes about 10 -15 years, biopharmaceutical companies face increased market demands, time pressure to accelerate development and reduce costs. During my doctoral work, I developed machine learning and hybrid modeling solutions for various applications in biotherapeutics development and production that would help circumvent the challenges currently faced by the industry. Using these tools, I could demonstrate that such algorithmic frameworks have a remarkable potential to improve understanding, accelerate development, and support monitoring and control of complex processes.

CV: Harini received her B.Tech. in chemical engineering from the NIT, Tirchy, India in 2016, and M.Sc. in chemical and bioengineering from ETH Zurich, Switzerland, in 2018. In March 2018, she started her doctoral studies in the Biochemical Engineering Laboratory and the group of Prof. Morbidelli. Her doctoral work is in close collaboration with DataHow, AG.