OutSee

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DISCOVERING NOVEL DRUG TARGETS USING AN INNOVATIVE AI GENOMICS TECHNOLOGY THAT UNCOVERS DISEASE-MODULATING BIOLOGICAL MECHANISMS.

Website

Overview

OutSee is being launched to take advantage of the opportunity to exploit large-scale genomics datasets by using its proprietary AI genomics technology for novel drug target discovery and validation. The technology, recently published in Nature Comms, has been 10 years in development in academia.

The founder, Gough, owns the technology IP in the form of patents, copyright and knowhow. He is committing to becoming the full-time CEO, using his experience from: founding, leading, fundraising, doing business development deals for, and working on the executive and board of other start-ups over the last 10 years.

The Challenge

There have been great advances in our ability to sequence genomes, and at decreasing cost leading to the ever-growing production of genomic data. This has however not been matched to the same degree by innovation and invention of computational techniques for the interpretation.

The great potential for medical and therapeutic advances, that is known to be contained within the information encoded in people's genomes, is now being widely exploited by pharmaceutical and biotech companies. Even after applying the state-of-the-art genome analysis tools, existing datasets remain heavily underexploited, leaving enormous opportunities for anyone who can extract further value using new technologies.

The Solution

The traditional approach to human genetics asks "Does the data contain the answer to my question?", whereas we instead ask: "For which questions does an answer lie within the data?". Instead of relying on statistical association between genotype and phenotype, we have a predictive algorithm based on knowledge of molecular and cell biology.

This is non-competing with state-of-the-art methods, extracting only additional value from genomics cohorts. Using our reverse (or 'genetics first') approach, yields verifiable hypotheses for novel mechanisms and pathways that modulate diseases. We can discover new drug targets from already-mined genomic datasets and stratify patients in new ways.

Publications and Patents

Publications:

- Hypothesis-free phenotype prediction within a genetics-first framework (Nature Comms, 2023)

Patents:

- Determining phenotype from genotype (WIPO WO2017125778A1)

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