

# CHRISTOPHER HAGEDORN

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## EDUCATION

**Bentley University**, Waltham, MA.

Bachelor of Science, Computer Information Systems.

Honors: Merit Scholarship. Completed a four-year degree within three years. Minor in Finance.

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## PORTFOLIO

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**Decentralized Finance Liquidity Analysis Data Pipeline** | *Python (Snowflake, Flask), Javascript (Typescript)*

- Developed and implemented abstraction tables encompassing all concentrated liquidity protocols, delivering streamlined and accessible datasets to empower investment research analysts.
- Analyzed consumer behaviors and their impact on liquidity for decentralized financial exchanges, avoiding the TerraUSD/Luna price depeg, resulting in savings for the firm of over \$125,000.
- Built parameter adjustable models that resulted in a 350% increase of non-technical researchers using the system.
- Engineered a robust solution to address the challenge of excessive overhead and fragility resulting from complex data shuffling by consolidating data transformations and storage in a unified cloud-based environment.

**Multi-Strategy Quant System** | *Python (NumPy, Pandas, Matplotlib, bs4, Databento APIs, Broker APIs), R*

- Used CME Group Market and Equities Market data from Databento to build data pipelines, support alpha research, alpha strategy, portfolio allocation and order submission on multiple brokerages for a personal portfolio.
- Utilized volatility targeting schemes and technical diversification to model and manage portfolio volatility, standard deviation, and portfolio profit and loss, resulting in 36% improvement in risk-adjusted returns.
- Generated unified alpha signals by back-testing strategies on historical data and modeling performance metrics for formulaic alphas, calculating financial metrics, seasonal variations, persistence, return densities, and factor models.
- Implemented software optimization techniques such as data pickling, multi-threading, and vectorization to expedite the performance of numerical computations, clocking in at 4000 executions per second on consumer hardware.

**Jellydrop Casino** ([Demo](#)) | *JavaScript (Node.js, React, Typescript, Tailwind CSS), Rust (solana\_program), R*

- Spearheaded the development of a Solana-based cryptocurrency casino, collaborating with artists, investors, engineers, and non-technical stakeholders.
- Initiated and executed strategic initiatives that substantially scaled the casinos user base from 1,000 to 10,000 unique users, leading to the generation of over \$100,000 in total revenue.
- Conducted specialized Monte Carlo simulations for diverse casino games, assessing investment returns across various game types, resulting in an 80% improvement in predicting return on investment ranges over time.

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## EXPERIENCE

**Lean IX**, Boston, MA

August 2022 - May 2023

*Part-Time Software Engineer*

- Created GraphQL-based, end-to-end tested [web reports](#) for the company's SaaS clients, simplifying enterprise data representation and supporting the mission of delivering enterprise-level intelligence.
- Engineered an efficient recursive algorithm to index a corporation's complete application stack for risk threats, making use of geometric transformations and two-dimensional objects for optimization.

**CIS Sandbox**, Boston, MA

August 2021 - April 2023

*CS/DA Teacher Assistant*

- Mentored students in higher education computer science and data analytics subjects instructing over 400 students.
- Led a team of 24 tutors elevating the school's capacity to provide multi-access on-demand learning.

**Seedbox Investing**, Philippines

May 2019 - August 2019

*Quantitative Research Intern*

- Utilized mathematical preprocessing methods—scaling (Min-Max, Z-score), imputation, feature engineering, PCA for dimensionality reduction—on Philippine Stock Exchange Equities data to enhance the quality of historical data.
- Developed sophisticated Excel-based visualizations to present findings to non-technical stakeholders.

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## ADDITIONAL INFORMATION

- Technical skills: Typescript, JavaScript (React, React-Native, Node, Vue, TanStack Query, GraphQL, Comlink, Graph.js, web3.js, Socket.io, Next.js), Python (NumPy, Pandas, scikit-learn) R, SQL, Java, Snowflake, dbt, Git.
- Other relevant skills: Bloomberg Certification (Equity, Fixed Income, FX, Commodities). Adobe Media Software (Photoshop, Lightroom, Premiere Pro, After Effects, XD). Figma. Docker. AWS. Vercel.