#BODY

John Hilbert

'I have no special talents. I am only passionately curious.'
- Albert Einstein

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412.480.4768
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Positions {POSITION BODY}

Education {EDUCATION BODY}

Publications {PUBLICATION BODY}

Honors {ACCOLADE BODY}

Skills {SKILL BODY}

#POSITION

{Position.Title}
at {Company.Name}

{Position.Date - Start} to {Position.Date - End}

{Position.Description}

- {Responsibility.Name}

Projects

#PROJECT

{Project.Name}

{Project.Description}

- {Project Detail.Name}

#EDUCATION

{School.Name}

{Education.Degree} - {Education.Concentration}

{Education.Date - Degree} {Education.GPA} GPA

#SKILL

{Skill.Category}

- {Skill.Name}

#ACCOLADE

{Accolade.Name}

{Accolade.Date}

{Accolade.Description}

#PUBLICATION

{Publication.Title}

{Publication.Date} {Publication.Journal}

COLORS

cfd7e3
87aade
5f8dd3
548dd4
214478

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Positions

Senior Advisor - Solutions Architect

at UPMC Health Plan - Department of Health Economics

2020-09 to 2024-07

Recommends, designs, builds, and configures analytical applications to solve business problems.

- Bring together diverse talents, information, technologies, and innovations to build robust and focused business solutions
- Guide, translate, and prototype solutions in a rapid agile manner across various departments
- Provide end-to-end analytical solutions to business problems across the organization
- Identify customer analytical needs or deficiencies often independently
- Collaborate on the design and development, outlining technical and analytical requirement needs
- Manage solutions through the entire lifecycle with particular attention to monitoring impact and value continuously

Projects

Community HealthChoices Benefit Optimization

An application to initiate contact and coordinate transition of members through the application process.

- Evaluate requirements and the application process to understand technicalities and determine deficiencies.
- Propose improvements to reduce the burden on care managers and increase enrollment success.
- Identify and route members through the process between departments and vendors as defined by desired rules and predictive models.
- Automate and integrate the application within the client's framework.
- Consult periodically on yearly performance.

Medicare Retention

Advise the business on the use of data, vendors, and intervention.

- Assist in evaluating strategies.
- Analyze the effectiveness of the chosen interventions.

Identification of Palliative Care Need

Increase awareness of palliative care benefits for members most suitable.

- Consult with and facilitate discussions between medical directors and

data scientists.

- Generate BI tools to assist in strategy design.

Senior Data Scientist

at UPMC Health Plan - Department of Health Economics

2018-01 to 2020-09

Responsible for collecting, analyzing and interpreting data to help drive decision-making in the organization.

- Serve as a resource for NLP research and departmental representative to UPMC's subsidiary business incubator
- Mentor and oversee junior colleagues in proper analytical practices, statistical methods, data engineering, and programming
- Provide insights to assist product owners and executives in making informed decisions
- Serve as the author and custodian of various internal and external data

Projects

Pharmacy Intervention Recommendation Tool

An application to assist care management activities to improve and maintain medication adherence for diabetes, cholesterol, and hypertension.

- Accurately calculate a member's percentage of days covered daily with estimated correction for IBNR.
- Route members to proper interventions per requested business rules and predictive models.
- Fully automate reporting with tracking of data lineage.
- Monitor and estimate yearly performance.

Word Embedding to Identify Homelessness

An NLP model to predict a patient's risk of homelessness.

Text Data Integration and Proof-of-Concept

Provide guidance on the unstructured EMR data lake created for NLP research.

- Assist in the use of the API by scientists and engineers.
- Prototype improved processes with additional data for comparison with current practices.
- Present the investment and value of integration.

Manager, Predictive Analytics

at Highmark Health

2016-08 to 2017-10

Consult with clients, manage projects, and support scientists with predictive analytics.

- Build and manage a robust enterprise-level data science team during restructuring and growth
- Promote the use of novel data, analytical technologies, and statistical methods across the business
- Establish and maintain sound analytical practices focused on structure, quality, and documentation

Projects

Find Your Perfect Doctor

A doctor-patient matching platform that matches a user with the best PCP based on their profile created through a series of specifically designed questions, demographic information, and medical history.

- Responsible for conducting research, developing and evaluating models, and ensuring their seamless integration into the application.
- Collect and coordinate data and functional requirements between analytics, marketing, and IT departments.
- Assist in the design and evaluation of models, ensuring their effectiveness and integration into the application.

Optimal Emergency Department Site Selection

Identify and recommend optimal locations in the region for new Allegheny Health Network services to either capture non-member utilization or satisfy future changes in Highmark membership.

- Develop methods to identify optimal locations for health services.
- Prepare and present comprehensive scenarios to support the creation of strategic partnerships for network growth.

Geographic Market Segmentation

Create mutually exclusive, collectively exhaustive geographic partitions of Pennsylvania for use throughout the enterprise for business analysis and reporting.

- Collect and analyze business requirements to understand the needs of the organization.
- Create a standard set of segments, including translations from previous definitions and documentation of their use.
- Ensure data is accessible and transparent across the organization.

Director, Data Science / Lead Data Scientist

at Innovu, LLC

2015-04 to 2016-08

Leads the data science function, establishing policies, planning goals, and contributing to problem-solving, innovation, and business growth.

- Lead a team of data scientists responsible for researching, designing, prototyping, and validating analytical solutions
- Drive innovative solutions based on exploratory data analysis, applying knowledge of software engineering, statistics, data modeling, simulation, and advanced mathematics to recognize patterns, identify opportunities, and pose business questions
- Foster a cross-functional, agile environment spanning data warehousing, data modeling, data analytics, and data product development
- Determine the best design and timeline to apply practical data science-based solutions to actual business problems, often deciding the correct tradeoffs between accuracy, performance, scalability, and delivery time
- Communicate data-driven actionable results and recommendations clearly and concisely to senior leadership and non-quantitative audiences, including key business partners and clients
- Develop and drive changes to complex business and systems processes in partnership with other areas of the business, such as data warehousing/business intelligence, IT, and operations

Projects

Member Record Matching

Connect an individual's data across various vendor feeds over time with varying cleanliness.

- Utilize discretionary data elements, even those with unknown validity.
- Design a tunable method that can be updated with minimal volatility.
- Ensure the algorithm is fast and efficient for integration into the daily data pipeline.

Design of Analytical Data Layer

Extend the EDW following staging and storage of customer and vendor data. Specifically planned for varying levels of use and expertise.

- Design the application for use by data scientists (R, Python), business intelligence analysts (Looker), and software engineers.
- Incorporate data elements to easily validate quality between sublayers.
- Prototype and integrate the application into the data pipeline.
- Document elements for varying levels of expertise and use.

Product Design of Benchmarking Tool

Plan and prototype a tool for clients to compare themselves with other similar clients across various metrics.

- Create primary and derivative metrics to measure performance.
- Wireframe to illustrate the flow and use of the application to stakeholders and customers.
- Design matched cohorts for comparative analytics, ensuring sufficient randomization to satisfy client and HIPAA privacy requirements.

Data Scientist

at UPMC Health Plan - Department of Health Economics

2010-09 to 2015-04

Collects, analyzes, and interprets data to help drive decision-making in the organization.

- Provide insights to assist product owners and executives in making informed decisions
- Promote the use of analytics throughout the organization
- Serve as a guardian of various internal and external data
- Act as a software and analytics liaison/advisor within and between departments in the organization

Projects

Financial Forecasting

Monthly cost projections for corporate budget.

- Estimate medical and pharmacy costs of members each month for the next 12 periods.
- Reproduce monthly cost estimations automatically following EDW updates.
- Partition the model by line of business (e.g., commercial, Medicare, etc.) and service category (e.g., Inpatient, Urgent Care, PCP, etc.).

Provider Network Modeling

Analyze, model, and visualize provider interactions through sharing and referral of members.

- Investigate networks naturally formed between hospitals, specialists, and primary care physicians.
- Investigate transfers within (emergency department ⇄ short-term observation ⇄ inpatient) and between hospitals (such as general ⇄ specialty).

Provider Specialty Categorization

Define and categorize providers by submitted procedures.

- Define specialty through a graph network created between reported specialty and reported procedures.
- Identify and correct provider specialty through comparison of procedure networks.

Specialist Performance Reporting

Comparative assessments of specialty providers used by the healthplan.

- Construct dimensionless quantities invariant of risk and cost to be used for ranking and comparison of providers.
- Create interactive visual reports for medical directors and executives to assess network and strategies.

Visualization and Reporting POC

Evaluate options and advocate for the adoption of more suitable BI software for reporting and data visualization.

- Gather and assess limitations in current software and procedures.
- Reproduce examples of current reports in commercial and open-source applications for comparison and evaluation.

Quality Assurance Lead

at Aegisoft LLC

2008-11 to 2010-09

Ensure product quality before release by conducting rigorous testing and analysis.

- Manage, coordinate, and train global off-site and local QA engineers
- Conduct black-box testing of algorithmic trading platform and associated applications
- Document new features, including automated algorithms, and prepare test plans

Projects

Quantitative Analyst / Consultant

at TransMarket Group

2007-09 to 2008-09

Analyze securities and other business data to inform trading strategies and manage risk using mathematical and statistical methods.

- Assist in research endeavors regarding fixed income and equity trading

- Provide insights and implement improvements in current processes and applications

Projects

Identification of Portfolio Arbitrage Opportunities

Hierarchical clustering of the majority of the U.S. market cap.

- Identify clusters and analyze their bonding behavior.
- Estimate the expected price and volatility of groups daily.

Market Simulator Model Optimization

Upgrade daily parameter estimation for models used by traders to facilitate larger, more robust predictions.

- Create an innovative hybrid of the Nelder–Mead method and genetic algorithms.
- Improve performance further through conversion event-based messaging for multithreaded scaling.

Signal Detection for Algorithmic Trading

Identify optimal timing of spread trades.

- Analyze time series of equities using ARMAX, VARMA, and wavelet transforms in MATLAB.

Teaching Assistant

at University of Pittsburgh - Department of Physics and Astronomy

2004-09 to 2005-12

Assist professors with instructional responsibilities.

- Oversee weekly recitations
- Grade homework, quizzes, and exams

Projects

Adjunct Professor

at University of Pittsburgh - Department of Physics and Astronomy

2004-05 to 2007-08

Part-time adjunct faculty to teach introductory classes.

- Instruction of Introductory Physics course

- 6-week summer session
- Manage assistants and recitations

Projects

Education

Katz Graduate School of Business

Certificate - MBA Essentials

2010-04 {Education.GPA} GPA

University of Pittsburgh

Masters of Science (PhD ABD) - Physics

2008-12 3.79 GPA

Kent State University

Bachelors of Science - Physics & Mathematics

2003-05 3.35 GPA

Publications

Using Decision Trees to Manage Hospital Readmission Risk for Acute Myocardial Infarction, Heart Failure, and Pneumonia

2014-08-27 Applied Health Economics and Health Policy

Charmonium-Nucleon Dissociation Cross Sections in the Quark Model

2007-01-29 Phys.Rev.C

Honors

Center for Nuclear Research Award

2003-05

Outstanding scholastic achievement in upper-level modern physics courses related to nuclear / particles physics.

Society of Physics Students

2003-05

Founder of the Kent State University chapter aiming to promote interest in physics, provide opportunities for professional development, and foster a sense of community among physics students.

Pi Mu Epsilon

2002-04

A prestigious honor society in the United States recognizing and promoting excellence in mathematics among undergraduate and graduate students.

Boy Scouts of America - Eagle Scout

1996-05

The BSA is known for its emphasis on outdoor activities, leadership development, and community service. Scouts participate in a variety of activities, including camping, hiking, fishing, and community service projects. They also learn about citizenship, character development, and personal fitness. An Eagle Scout is the highest rank attainable requiring a Scout to demonstrate leadership, service, and personal growth.

Skills

Analytics	▪ Time Series Analysis ▪ Text Mining ▪ Predictive Analytics ▪ Data Science ▪ Network Analysis	▪ Clustering Algorithms ▪ Statistical Model Validation ▪ Statistics ▪ Data Analysis	▪ Natural Language Processing (NLP) ▪ Machine Learning ▪ Pattern Recognition ▪ Exploratory Data Analysis
Development	▪ Requirements Analysis ▪ Database Design	▪ Agile Software Methodologies ▪ Version Control	▪ Data Modeling
Finance	▪ Fixed-Income Investing	▪ Equity Trading	
General	▪ Technical Communication ▪ Econometrics	▪ Teaching / Mentoring	▪ Computer Science
Healthcare	▪ Electronic Medical Records	▪ Medical Claims Data	
Programming	▪ Python ▪ PowerShell ▪ HTML ▪ C++	▪ R ▪ Regular Expressions ▪ JavaScript ▪ C#	▪ SQL ▪ MarkDown ▪ Lisp ▪ VBA
Software	▪ Microsoft Word ▪ Microsoft Access ▪ Microsoft Power BI ▪ Linux ▪ Docker ▪ Microsoft Power Automate ▪ Statistica ▪ Maple ▪ Gimp	▪ Microsoft Excel ▪ Google Docs ▪ Tableau ▪ Git ▪ Google Scripts ▪ AWS RedShift ▪ SAS ▪ Adobe Photoshop ▪ Inkscape	▪ Microsoft PowerPoint ▪ Google Sheets ▪ Looker ▪ Emacs ▪ AWS EC2 ▪ AWS S3 ▪ MatLab ▪ Adobe Illustrator