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Science Specialization Programs MSIM Specializations Data Science The Data Science (DS) specialization prepares you with skills to study the computational and quantitative analysis of large datasets to transform data into action. The MSIM program provides pathways to ensure students from all technical backgrounds are able to succeed in this specialization. Students often pair this specialization with Business Intelligence, Program/Product Management & Consulting, or Cybersecurity. This specialization teaches you to use methods, tools and frameworks for analyzing and harnessing data into actionable insights that drive decision-making. Availability: Online ; Residential, daytime and evening classes Skills you will develop Transform data into action by using computational and quantitative methods, tools and frameworks to analyze and derive insights from large-scale, heterogeneous data to make strategic decisions. Learn the theoretical and practical foundations of data science through key concepts, such as exploratory data analysis, statistical inference, supervised and unsupervised machine learning, scaling and distributed computing, and network analysis. Use tools/techniques to build large-scale neural models for text and images and understand their impact on privacy and equity. ?My data science skills have blown way past my own expectations, and I've become a very capable data practitioner.? ? Jesse Velasquez, ?22 Elective courses in the Data Science specialization This specialization consists of three courses that will help you master the theoretical and practical foundations of data science and hone your technical skills. Courses in this specialization are sequenced and cannot be taken out of order. Learn more about the core, elective and Capstone/practicum courses in the UW MSIM curriculum. IMT 573: Data Science I Theoretical Foundations (4 credits) Provides an overview of key concepts, focusing on foundational concepts such as exploratory data analysis and statistical inference. Assignments are data-intensive and require significant programming and statistical analysis. IMT 574: Data Science II Machine Learning & Econometrics (4 credits) Provides theoretical and practical introduction to modern techniques for the analysis of large-scale, heterogeneous data. Covers key concepts in inferential statistics, supervised and unsupervised machine learning, and network analysis. IMT 575: Data Science III Scaling, Applications and Ethics (4 credits) Challenges and opportunities of data science at massive scale. Covers systems and languages for manipulating data across hundreds of

computers, tools and techniques for building large-scale neural models for text and images, and the impact on privacy and equity as these large-scale models proliferate. Career outcomes Students who specialize in business intelligence frequently find roles with titles including data analyst, data management specialist, data scientist, machine learning engineer, and technical program manager.

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