## **Table of Contents**

Revolutionizing Prostate Cancer Diagnosis: An Integrated Approach for Gleason Grade Classification and Explainability Anil Gavade, Rajendra Nerli, Shridhar Ghagane, and Les Sztandera	1
Heavy Metals in Human Health and Pregnancy: How Data Analysis, Mining, and Modeling Present a Solution <i>Emma Frennborn, Khalil Rust, and Les Sztandera</i>	7
Recent Advances in Machine Learning for Log File-Based PSQA for IMRT and VMAT Kellin De Jesus, Leon Dunn, David Thomas, and Les Sztandera	12
Data Mining Techniques in Online Health Communities Cassandra Mikkelson and Cali Sweitzer	19
Detecting Suicide Risk and Exploring Contributing Factors: Classification and Topic Modeling of Social Media Data Evan Dan, Jianfeng Zhu, and Ruoming JIn	23
BARRIER: Beta-Secretase 1 Reduction for Amyloid Plaque Regulation through Inhibition Exploration and Research <i>Neel Banga</i>	29
A Hybrid Machine Learning Approach for Enhanced Skin Cancer Diagnosis Using Convolutional Neural Networks, Support Vector Machines, and Gradient Boosting <i>Fazila Patel, Adedayo Olowolayemo, and Amina Souag</i>	35
Comparative Case Study on Implementing Generative AI in Medical Practices to Ease Documentative Overburden: A Sociotechnical Systems Perspective Sri Ramesh Eevani and Rajiv Nag	42
Personalized Automated Blood Glucose Forecasting for Type-1 Diabetes Using Machine Learning Algorithms Avijay Sen, Dr. Sindhu Ghanta, and Pallavi Bajpai	47
NextStep: Optimizing Healthcare Resource Delivery Using a Multilingual Artificial Intelligence Assistant Abhinav Kona and Bibek Samal	55
A Dual-Approach to Benign and Malignant Tumor Detection: Classification and Segmentation Using Advanced Deep Learning Models <i>Caitlin Dosch and Shilpi Shaw</i>	61
Determinants of User Trust in an AI-enabled System in the Development Stage <i>Pi-Yang Weng</i>	68