Brad V Bellomo

September 2024

PhD Candidate
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HIGHLIGHTS

Presentation at BICOB 2022 and publication in Conference Proceedings
26 years Professional Software Development

EDUCATION

Current	Ph.D., Department of Computer Science Kent State University, Kent, OH 44242 Advisor: Professor Arvind K. Bansal Area: Bioinformatics, miRNA Technologies: Python, C#, SQL Server, NIH and Ensemble databases
2008	M.S., Department of Computer Science Kent State University, Kent, OH 44242 Advisor: Professor Arden Ruttan Area: 3d modeling of cell dynamics Technologies: C++, OpenGL
2000	B.S., Department of Computer Science 300 College Park, Dayton, Ohio 45469 Area: 3d graphics Technologies: C++, Java, Ada, 3d Studio Max

DISSERTATION ABSTRACT

miRNA (micro RNA) are around 22 nucleotide long gene-sequences involved in regulating the mRNA (messenger RNA). miRNA is first bound with Argonaute for the RISC, which binds to a target site on the mRNA. This generally leads to translational repression followed by mRNA decay, but in some cases, protein is upregulated. This change in expression has been shown to affect biological pathways playing a role in multiple life-threatening diseases such as cancer, viral diseases and immune deficiency diseases.

This work presents a model for identifying and quantifying miRNA target site binding locations. This includes an algorithm to examine the effects of mutations, such as SNPs and indels to target sites. We also provide evidence that mRNA secondary structure plays an important and novel role in target site efficacy.

INDUSTRY EXPERIENCE

2017 - Current   Senior Software Developer, Globe Life Family Heritage Division
iPad software for insurance sales
Maui, Xamarin, C#, SQL Server, Vue.js, AWS, git

2014 –2017   Senior Software Developer, New York Community Bank, Ohio Savings
Mortgage Origination process automation and compliance
C#, React, Angular JS, jQuery, Oracle

2005-2014   Software Developer, The Law Offices of John D. Clunk Co., LPA
Foreclosure, Bankruptcy and Real Estate law
First developer on staff replacing an outside consulting company,
worked with lawyers, staff and management to define business and
software processes and accounting practices
C#, SQL Server,

2003-2005   Software Developer, Merge Technologies, RIS Logic
Radiology scheduling, patient management and billing software
C#, C++, Visual Basic, Javascript

2001- 2003   Independent Consultant

1998-2001   Software Engineer, Nextech
Plastic Surgery scheduling, patient management and billing software
Helped take a small startup to an industry leader
C++, SQL Server

RESEARCH INTERESTS

Artificial Intelligence

Bioinformatics study of miRNA, RNA Structure and Translation

CONFERENCE PRESENTATIONS

2022   Bellomo, Brad V., Helen Piontkivska, and Arvind K. Bansal. "Variation of miRNA target sites in the Human Genome." *Proceedings of 14th International Conference on Bioinformatics and Computational Biology*. Vol. 83. 2022.

SEMINARS

2023   Grant Training Center

COURSERA

2021	Deep Learning
2020	Fundamentals of Immunology
2018	Machine Learning

REFERENCES

Arvind K Bansal
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