

INVENTING THE SUIT AND SAVING THE WORLD: ONE HUMAN'S STORY OF
UNPARALLELED GENIUS, INTERMINABLE COURAGE, AND GENERAL
AWESOMENESS

by
Anthony Stark
B.S. University of Pirates, 2020

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of

Master of Science
in
Engineering

University of Alaska Fairbanks
May 2025

APPROVED:

Bruce Banner, Committee Chair
Thor Odinson, Committee Member
Natasha Romonoff, Committee Member
Jane Van Dyne, Committee Member
Clinton F. Barton, Chair
Department of Mechanical Engineering
Nick Fury, Dean
College of Business and Security
Management
Emeline Jones, Interim Director
Graduate School

© Copyright by Anthony Stark
All Rights Reserved

Dedication

To Wanda Maximoff:

Write as a block (or single paragraph) with no indentation. The dedication is optional. A dedication is an expression of friendly connection, gratitude, or thanks by the author towards another person or person(s). It may also be used to highlight a connection to a community or cause. Adapted from Wikipedia. The dedication has its own place on the dedication page and is part of the front matter.

Abstract

Abstract to be less than 300 words. Write as a single block without indentation. The abstract is required. An abstract is a concise summary of your thesis. It should summarize your thesis, its results, and their broader relevance. It allows readers determine the relevance of your thesis for their own research. It also communicates your key findings to those who don't have the time to read your entire thesis.

Plain Word Summary

Plain word summary to be less than 300 words. The plain word summary is optional. Write as a single block without indentation. Write as a single block without indentation. A Plain Word Summary should convey the same information as the Abstract but in a different language and tone. It should summarize your thesis, its results, and their broader relevance without using jargon so that it is understandable by readers from outside of your discipline, as well as journalists and educators. The audiences include, but are not limited to, practitioners, policy makers, the public, and/or professionals in nearby disciplines.

Acknowledgements

Write as a paragraph, or paragraphs, with indentation. The acknowledgements section is optional. I would like to extend my heartfelt thanks to the following entities, without whom this thesis would not have been possible. My alarm clock, for its unwavering commitment to disrupting my dreams at the most inconvenient times, ensuring that I never got too comfortable in my slumber. The coffee machine, which faithfully dispensed caffeine on demand, turning me into a jittery, sleep-deprived academic zombie during many late-night writing sessions. The endless stream of cat videos on the internet, which, while distracting, provided much-needed moments of respite from the grueling task of researching and writing. My neighbor's dog, who barked tirelessly at all hours of the day, serving as a reminder that sometimes life's challenges come in the form of non-human companions. The ghost of Albert Einstein, who may or may not have whispered the secrets of the universe to me during my late- night epiphanies. Though his contributions remain unverifiable, I'd like to think I owe him a nod of appreciation. Last but not least, the cosmic forces of the universe, for conspiring to bring together this strange amalgamation of elements and events, leading to the creation of this peculiar thesis. In conclusion, this thesis is a testament to the unpredictable, bizarre, and at times, maddening journey of academic pursuit. I am grateful for all the oddities and idiosyncrasies that contributed to its completion. I acknowledge the support of the graduate school for a travel grant in Fall 2022. I acknowledge the support of the National Science Foundation under grant 2012345.

Table of Contents

Copyright	iii
Dedication	iv
Abstract	v
Plain Word Summary.....	vi
Acknowledgements.....	vii
Table of Contents.....	viii
List of Figures	ix
List of Tables	x
Chapter 1: Introduction.....	1
Chapter 2: Methods.....	2
2.1 Study System.....	2
2.2 Mathematical Model	2
2.3 Statistical Model.....	2
Chapter 3: Results: Long ToC entries should not extend into the numbers column. They should stop before reaching the number.....	4
3.1 Steady State Solution	4
3.2 Non-territorial Individual Analysis	5
Chapter 4: Discussion	6
References.....	7
Appendix A: Supplemental Material	8
Appendix B: More Supplemental Material.....	9

List of Figures

Figure 1.1: A capybara wearing a suit. Probably has an important meeting to get to.	1
Figure A.1: Frog looking real dapper.	8

List of Tables

Table 2.1: Model components and parameters making up advection diffusion model as well as biological interpretation in model's system.	3
Table 3.1: They all seem to be negative. Maybe that's significant? Maybe it's not. Why are a bunch of them 0.1?	4

Chapter 1: Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.



Figure 1.1: A capybara wearing a suit. Probably has an important meeting to get to.

Chapter 2: Methods

2.1 Study System

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

2.2 Mathematical Model

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismodnunc eupurus. Donec bibendumquam in tellus. Nullamcursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

$$\frac{\partial u_i}{\partial t} = \underbrace{D \nabla^2 u_i}_{\text{Random Motion}} - \underbrace{2 \nabla [A_i \nabla u_i]}_{\text{Directed Motion}} \quad (2.1)$$

2.3 Statistical Model

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

$$f(\mathbf{x}|\mathbf{y}, \theta_0) = \frac{\phi(\mathbf{x}|\mathbf{y}, \theta_0) \omega(\mathbf{x}, \boldsymbol{\beta})}{\int_{\Omega} \phi(\mathbf{x}'|\mathbf{y}, \theta'_0) \omega(\mathbf{x}', \boldsymbol{\beta})} \quad (2.2)$$

Table 2.1: Model components and parameters making up advection diffusion model as well as biological interpretation in model's system.

Parameter	Interpretation	Dimensions
$\mathbf{x}$	spatial location	[1x2]
$u_i(\mathbf{x},t)$	individual territory	[1x1] (i=5)
V_{hr}	vector field defining available space	[1x1]
$B(\mathbf{x})$	perceptive range of individual	[1x12]
$s_j(\mathbf{x},t B(\mathbf{x}))$	Spatially averaged effect in perceptive range	[1x1] (j=4)
$B^C_{i,j}$	effect of conspecific (from iSSA)	[5x5]

Chapter 3: Results

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

3.1 Steady State Solution

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Table 3.1: They all seem to be negative. Maybe that's significant? Maybe it's not. Why are a bunch of them 0.1?

	TET052	TET030	TET072	TET062	TET074
TET052	-	-0.3	-0.1	-0.1	-0.14
TET030	-0.26	-	-0.1	-0.2	-0.2
TET072	-0.1	-0.1	-	-0.13	-0.1
TET062	-0.1	-0.31	-0.16	-	-0.1
TET074	-0.13	-0.21	-0.1	-0.1	-

3.2 Non-territorial Individual Analysis

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eupurus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Chapter 4: Discussion

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consetetuer.

References

- Einstein, A., Darwin, C. & Linnaeus, C. (1425) The hungry hungry moose. *Journal of Hungry Animals*. 3, 2150–8925.
- Styles, H., Horan, N., Payne, L., Tomlinson, L. & Malik, Z. (1985) How many directions are there: Only the one. *Scandinavian Journal of Music*. 12, 97–15.

Appendix A: Supplemental Material

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismodnunc eupurus. Donec bibendumquam in tellus. Nullamcursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.



Figure A.1: Frog looking real dapper.

Appendix B: More Supplemental Material

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sedjusto eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.