

# MIDDGUARD

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## **ABSTRACT**

Your abstract goes here.

## **ACKNOWLEDGEMENTS**

Your acknowledgements go here.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Visual Analytics

1. Why this is a useful tool in the context of visual analytics.

## CHAPTER 2

### BACKGROUND

#### **2.1 State of the Art**

1. Tools currently exist and inspired MiddGuard.
  - (a) Improvise
  - (b) Eagle Eyes

#### **2.2 Previous MiddGuard Work**

1. Front-end cache work from Fall 2015
2. MiddGuard Version 1 (Summer 2014)
  - (a) Reusable components
  - (b) Award/VAST 2015 challenge



## CHAPTER 3

### IMPLEMENTATION

#### 3.1 Concepts

1. Dataflow programming
2. Visual programming
3. Collaborative/real-time
4. Extensibility
  - (a) Front-end views
  - (b) Back-end analytic nodes
5. Reusable nodes (agnostic of input/output data)
6. Technology choices

#### 3.2 Technology

1. Node.js
2. Relational database (instead of NoSQL)
3. Socket.io
4. ORM
5. Backbone.js

## CHAPTER 4

### **RESULTS**

1. Test/example case (tweet analysis)
2. Ease of use for developer
3. APIs exposed on front-end and back-end

## CHAPTER 5

### DISCUSSION

1. Use in real investigation (VAST Challenge 2016)
2. Room for improvement
  - (a) Better caching on front-end to help developers optimize DOM/memory usage
  - (b) Have to see if there is any else I don't have time to implement

## CHAPTER 6

### CONCLUSION

1. Revisit points from previous sections
2. Why MiddGuard is an important visual analytics tool
3. Open source prospects

## APPENDIX A

### CHAPTER 1 OF APPENDIX

Appendix chapter 1 text goes here

## **BIBLIOGRAPHY**