

# Research Statement

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## Overview

My research focuses on considering how firms and individuals use communication to improve their outcomes. In particular, I am interested in how individuals choose which messages to send and, in a dynamic context, when to send them. In my current research, I have focused on applications related to the media and to labor market negotiations. However, given the important role that communication plays in most applied economic contexts, I am interested in working on a wide range of problems that transcend the traditional field boundaries.

## Dissertation Research

### Online News and Editorial Standards

In my job market paper, “Online News and Editorial Standards,” I address the question of how the internet affects the news content released by media firms. To address this question, I model the process of internet news production and compare it to news production prior to the internet. In particular, to capture the dynamic nature of internet news, I depart from the typical approach in the media literature of viewing the news release decision as consisting of a single action. Instead, I allow for the firm’s decision to be fully dynamic in that—with the internet—a media firm can initially post or change an existing article at any time. I consider the effect that this change in the timing of news production and consumption has on the firm’s *editorial standard*, which is a cutoff that determines how certain a firm must be about the state-of-the-world in order to release a news story about it.

To do so, I use a finite horizon continuous-time model that begins at the moment at which a news event occurs. The media firm has a prior about which event occurred, and it updates its prior based on leads that arrive according to a Poisson process over time. I compare two scenarios: a “Before-Internet Scenario (BIS)”, in which the firm can only post once, and an “After-Internet Scenario (AIS),” in which the firm can initially post or update an existing article at any time. A firm gets revenue proportionate to the share of the market that reads it, but incurs a proportionate cost if it posts incorrect information. I find that, in the BIS, there is a fixed cutoff such that the firm will post a message stating that event  $x$  occurred if and only if its posterior at the posting time

is above the cutoff.. In the AIS, the firm will use the same cutoff if there is zero retraction cost, but will otherwise use a stricter cutoff that is decreasing in time. This means that the firm may be more cautious about posting on the internet and thus less likely to post incorrect information. However, if the firm has a particularly strong prior belief about the event, it may end up surpassing this cutoff early on and therefore post an article that it would not have posted without the internet.

## **Wage Disclosure**

In “Wage Disclosure,” I consider the potential effect of a new policy that has been implemented in several jurisdictions banning employers from asking job applicants for their current wages. Without this policy in place, many employers require job applicants to disclose their current wage in order to submit a job application. As employers use this information to estimate the applicant’s reservation wage—and make the offer accordingly—policymakers in California, Connecticut, Delaware, Hawaii, Massachusetts, Oregon, and Vermont, as well as numerous cities, have recently banned employers from asking this question. While job applicants may prefer not to have their past salaries known, whether this would improve their outcomes or not depends critically on what an employer would believe about the applicant’s previous salary in the absence of such information. As voluntary disclosure of salaries is still permissible, the employer would need to consider which employees, if any, would choose to reveal their previous salaries. Models of voluntary disclosure typically lead to unravelling (Grossman, 1981; Milgrom, 1981), meaning that all individuals voluntarily reveal their private information. Standard results about unravelling do not apply in this situation, however, as there is not a known “best current salary” for this purpose. This is due to the fact that applicants who disclose too high salaries face a risk of being rejected for that reason. If an applicant is particularly interested in the job, she may be willing to accept a lower salary in order to avoid missing out on the opportunity to get the job.

Therefore, I consider a model in which two job applicants apply for one opening. I consider a “Mandatory Disclosure Scenario” in which job applicants must disclose their current wages, and a “Voluntary Disclosure Scenario” in which this decision is optional. After submitting the applications with this information, applicants learn more about the job and find out their non-wage benefit from working there, which combined with their current wage determines the wage offer they would need to accept the position. The employer chooses an applicant to make an offer to, and the applicant accepts or rejects the offer. I find that, if the dispersion of current wages is sufficiently large, there exists an equilibrium in which high-wage applicants and low-wage applicants pool on concealing, while those in the middle reveal. This has the potential to help the lowest wage applicants move up the income ladder and may help somewhat high-wage applicants stay in consideration for the job, but may hinder some of the highest wage applicants from getting acceptable offers.

## **Other Research**

### **Student Loan Debt and Home Purchase (with Mehreen Gul)**

In “Student Loan Debt and Home Purchase”, which I am coauthoring with fellow Rice graduate student Mehreen Gul, we consider the effect of student loan debt on the home purchase decision. This research is based on my master’s capstone paper. In this paper, we address the question of how the unprecedented levels of student loan debt held by young adults affects their decision about whether and when to purchase a home. On one hand, acquiring this debt is associated with getting a higher level of education, which helps ease the income constraint faced by home purchasers. On the other hand, having debt makes it harder for individuals to save up money for a down payment and makes debt-to-income constraints more likely to bind. To examine the effect of student loan debt on home purchase, we develop a structural model of a utility maximization problem in which individuals make home purchase decisions considering their current and expected future income, debt repayments, and credit constraints. We construct a data set that combines data from the 1997 National Longitudinal Survey of Youth (NLSY97) and the American Housing Survey (AHS), which we are using to estimate this model using simulated method of moments estimation.

### **When to Ask for an Update: Timing in Strategic Communication (with Ying Chen)**

In “When to Ask for an Update: Timing in Strategic Communication”, coauthored with Ying Chen from Johns Hopkins University, we consider the effect that the frequency of reporting information can have on outcomes in a principal/agent problem. We consider a model in which a principal needs to decide whether to take on a project that has an unknown value. This value is an increasing function of its two aspects. In each period, the agent learns about one of the two aspects with probability  $p$ . We compare two reporting protocols: frequent updating, in which the agent is asked to report the signal he received each period; and infrequent updating, in which the agent is asked for a summary report at the end. The agent is biased towards acceptance, and he can either report his signal truthfully or conceal it. We find that if the project’s expected value is lower than the receiver’s acceptance threshold, both reporting protocols result in the same outcome. If the project’s expected value is high enough that even nondisclosure leads to acceptance, then if it is unlikely for the sender to observe an informative second-period signal or if the divergence of interests is low, the receiver prefers frequent updating. Otherwise, the receiver prefers receiving a summary report.

## **Plans for Future Research**

In the near future, I have several avenues of research that I wish to explore. The first, which is in a similar line of research as my job-market paper, is on how firms learn from each other’s

posting decisions. In particular, I am considering a model in which there are two media firms: a left-wing firm and a right-wing firm. Each media firm gains revenue from having a story posted, but they receive more revenue if the story is consistent with the slant of their firm. A news event occurs which can have either a right-wing or left-wing interpretation. The firms share a common prior about the event, and learn about the state-of-the-world both from their own information and from observing what the other firm does. I am also planning on working on another project along the lines of my wage disclosure paper. In this paper, I will also consider when it is optimal for individuals to disclose the value of their outside option prior to bargaining. In this paper, I intend to look at a buyer/seller context in which both parties have verifiable private information about their outside option, and both have an unverifiable benefit from engaging in trade.

## References

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Milgrom, P. R. (1981). Good news and bad news: Representation theorems and applications. *The Bell Journal of Economics*, 380–391.