Thesis Project Portfolio

Reporting False Advertising Platform
(Technical Report)

Who To Blame for The L'ORÉAL Case?
(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

False advertising is still one of the big issues in today's digital marketplace, where misleading claims often go undetected. Persuasive phrases like "clinically proven" are proven to influence consumer memory, and most detection tools focus on surface-level cues and overlook subtler forms of manipulation and cannot catch advance manipulation tactics. Simultaneously, user-dependent platforms such as Google Reviews have lots of limitations, including fake reviews and the absence of reviewer verification. Recent studies show that 92% of consumers only read 2 reviews before making the decision to make a purchase, which is concerning, as two reviews are insufficient to avoid scammers.

The technical project proposes a solution for the false advertising issue which is a hybrid human-AI system in the form of a web-based reporting platform to better identify deceptive advertisements. When a user submits a report, they would first need to verify their purchase either by uploading a photo or, if the purchase was made through a partnered company, through direct transaction verification, which will be first analyzed by a Deep Neural Network (DNN) to flag suspicious content. Final verification is performed by human reviewers to ensure accuracy. The platform includes other functionalities such as searchable databases, "Top Reports" section, and filter to help users make informed decisions.

This design idea was partially implemented in a class in the computer science department, CS 3240 in spring 2024. Both Django and Amazon S3 were used in the building the app. Though the AI component is still not developed, stakeholder feedback from 25 participants indicated a strong desire for such AI-based reporting system. The project requires multiple sills technical skills in different areas such as machine learning, web development, and data analysis,

with Python serving as the primary coding language. This proposal aims to make false advertising detection more reliable and accessible to the average user.

In 2014, L'Oréal, a French multinational personal care company, launched new products and claimed that these products are "clinically proven" to have anti-aging and would lead to a youthful skin in seven days. These scientific promises attracted many consumers, but the Federal Trade Commission (FTC) later said that these claims are in fact deceptive. The STS research paper investigates the roles that consumers, advertising platforms, and regulatory agencies played in the L'Oréal's misleading anti-aging campaign.

Previous research focused on L'Oréal's visual and textual strategies in their misleading campaign; however, many analyses fail to study how different interactions among multiple actors in the L'Oréal's case maintain misleading claims. This STS paper uses Actor-Network Theory (ANT), a sociological framework developed by Latour, Callon, and Law, to examine how a network of both human and non-human actors (consumers, beauty standards, ad phrasing, and platform algorithms) contributed to L'Oréal's deceptive claims.

By looking the ads content, why people buy these products, and regulatory responses, this research shows that the issue is not just about one thing. It is caused by pressure from society and the use of scientific-sounding words. ANT helps explain how changing just one part can affect the whole system and maybe reduce false ads. Misleading advertising is not only about what companies say. It's a bigger issue that involves many connected parts, and these parts all work together in a way that helps misleading beauty claims keep going.

Both my STS research paper and the technical report focus on the issue of false advertising and to address its impact on consumers. The STS research paper explores the L'Oréal anti-aging case using Actor-Network Theory to show how different actors, such as advertising platforms and consumers, interact in ways that could lead or support misleading claims. It also shows how beauty standards and limited oversight contribute to a larger network that keeps false advertising alive in the beauty industry. The technical project builds on the STS research paper by offering a potential solution. It proposes a web-based platform that combines AI with human reviewers to help everyday users detect and report misleading ads. This design tackles the issues uncovered in the STS paper, such as unreliable consumer judgment and the lack of verification mechanisms. While the STS project provides a theoretical framework to understand the root of the problem, the technical project applies this understanding to create a tool that can empower users and improve advertising transparency. The technical and STS projects collectively would propose a solution which addresses both the technical and social aspects of false advertising while promoting transparency in the beauty industry's marketing practices.