**Private Location Centric Profiles for GeoSocial Networks**

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**Introduction**

Providing input to targeted advertising, profiling social network users is an important source of revenue for geosocial networks. Since profiles contain personal information, their construction introduces a trade-off between user privacy and incentives for participation for businesses and geosocial network providers.

We take first steps toward breaking this deadlock.

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**Motivation**

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**Our Contribution**

- Introduce the concept of location-centric profiles (LCPs)
- Propose PROFILE, a framework that allows the construction of LCPs based on user profiles
- Ensure privacy and correctness of participants
- Consider user movement requests
- Location correctness
- LCP correctness
- Propose a new extension PROFILE

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**Location Centric Profiles (LCPs)**

- Each user has a profile \( P_u = (s_u, n_u, v_u) \)
- Given a set of users \( U \) and LCPs \( \{LCP(u)\} \) in the set \( (s_u, n_u, v_u) \)
- We focus on a single profile dimension, \( D \)
- The aggregate statistics \( S \) for dimension \( D \) of LCP(\( u \)) consists of 5 contents \( c_1, c_2, \ldots, c_5 \)

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**Setup** (version 1.0.0)

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**Ordering** (version 1.0.0)

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**Checkin** (version 1.0.0)

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**PubStats** (version 1.0.0)

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**ZK-CTR: Proof of Correctness**

1. **U and SPOTZ, run the following steps:**
2. Define \( P_{SPOTZ} = \{P_u\} \)
3. Given \( U \) and \( \{LCP(u)\} \), \( U \) \( \subseteq \) \( P_{SPOTZ} \)
4. \( P_{SPOTZ} \) \( \subseteq \) \( P_u \)

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**Experiment Setup**

1. **Sparding:**
2. **Platform:**
3. **Device:**
4. **Test case:**

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**Solution Architecture (k=2)**

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**Setup dependence on Seminal modules site**

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**Storage and Communication overhead**

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**ZK-CTR Performance (Simple round)**

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**ZK-CTR Performance (Multiple rounds)**

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**Conclusions**

- Propose novel mechanisms for building aggregate location-centric profiles
- Maintain privacy of the participating users
- Ensure users' honesty during the process.
- Show that our solution is efficient, even when running on resource-constrained mobile devices

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**References**

1. [Bogdan Carbunar](https://example.com) and [Mahmudur Rahman](https://example.com).
2. [Florida International University](https://example.com)
3. [PosterPresentations.com](https://example.com)

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