My research interests include:

1. **Biinvariant word length**. Let G be a group generated by a symmetric set S and let $\overline{S}$ be the minimal conjugacy invariant set containing S. The biinvariant word metric, denoted $||.||$, is the word metric defined with respect to the (in most cases infinite) set $\overline{S}$. It may be dramatically different from the standard word metric (e.g. $SL(n, \mathbf{Z})$ is bounded in $||.||$). I am interested in the geometry of groups equipped with the biinvariant metric, especially in metric behavior of cyclic subgroups (i.e. distorsion).

2. **Uniformly finite homology**. This is a coarse version of homology theory defined by Block and Weinberger. Its relevance to geometric group theory is justified by the fact that vanishing of the zero homology characterises non-amenability. Recently higher uf homology groups were used to give homological characterisations of geometrical notions such as macroscopic dimension (A.Dranishnikov) and topological amenability (J.Brodzki, P.W.Nowak, G.A.Niblo, N.Wright). I am interested in possible further applications of uf homology in these directions.

3. **a-T-m property**. We say that a group is a-T-m(enable) if it admits a proper affine action on a Hilbert space. Every such an action consists of a linear transformation and a 1-cocycle. I am interested in methods of constructing affine representations as well as in growths of 1-cocycles.